Virginia Wildlife

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Virginia Wildlife

A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting, Fishing and Outdoor Recreation in Virginia

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SEPTEMBER

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IN THIS ISSUE PAGE

COVER: Gray squirrels are the most abundant and best known of the four kinds of squirrels found in Virginia. Several counties have squirrel seasons opening, according to legislative act, as early as September 1. This year the general hunting season opens on November 21 (see page 22). Our cover artist: Edward J. Bierly of Lorton, Virginia.

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GUEST EDITORIAL

Never Admit a Cause Is Lost

ANYONE with a substantial number of years in the field of conservation and who has had serious objectives, will not only have gradually accumulated a library of substance but a staggering poundage in bulletins, brochures, speeches, public utterances and news clippings, not to mention files upon files of correspondence and research papers.

Habits of individuals being what they are, some will have carefully indexed and filed these written treasures while others, like pack rats, will have their treasures stashed away from basement to attic, in desk drawers, or gathering dust in some forgotten cubbyhole. Like a treasure hunt, when searching for some elusive fact or figure, one comes onto buried jewels of wisdom—ashes of a once flaming issue—both noteworthy and insipid speeches, and names of some ambitious neophytes long since forgotten. So delightful is this diversion that the primary concern of the search is neglected and all but abandoned.

This research of records is an enlightening experience. It is surprising to discover that issues and battle lines have changed little in 50 years. Population increases and new generations have simply re-emphasized the issues. More facts have sharpened the perspective and the debate has been intensified. Unhappily, in many instances, the added facts have failed to overcome the conceit of the local expert and failed to arouse a lethargic public to greater effort.

The management of federal lands was plaguing Congress before the administration of Abraham Lincoln. With more people and with less land for disposal, who gets what through political power today defeats good public land administration.

Forest fires, for a century, were the bane of forest continuity. Forest fire control had until recently met with indifference in Congress, as evidenced by the lack of appropriation of funds for fire control in Alaska. Buying votes through various forms of subsidies seemed to have greater appeal.

In certain states deer management has been an acrimonious indoor sport since the turn of the century. It is still being blocked by block-headed attitudes.

Aldo Leopold was advancing the justification for wilderness preservation in 1910. Today two schools of thought make wilderness preservation a national issue.

Long-neglected prophecies regarding the effects of the abuse of water resources are now haunting the nation.

The voice of doom—ridiculed and vilified—which predicted the present plight of waterfowl because of poor land management, can point to the year 1959.

Yes, anyone who has collected the records of the past 30 or 40 years will discover some profound and intuitive prophecies therein, and some shallow, mischievous demagoguery as well. And this is as true today.

And in the records down through the years there is evidence of those few names grown famous—those whose vision, judgment and crusading spirit helped guide the nation in its effort at conservation.

The conglomeration of conservation literature that it is possible for any one person to collect is puny by comparison with the total effort flooding out from federal, state and private sources. What of all this is profound and what is shallow or transitory bears on the intellectual capacity of the individual to read and analyze it.

An astonishing amount of forest land has been denuded to supply the paper ammunition for the pros and cons of the conservation battle.

(Continued on page 11)

LETTERS

Do We Appreciate Our Wildlife?

OUR state is truly blessed with abundance of wildlife. Our streams and forests are beautiful and they are so near thousands of us. Many can travel to good hunting and fishing territory and return home by nightfall. I am afraid we take this as a matter of fact and spend little time realizing that there are many people who have spent hours and hours protecting our forests and streams so that our wildlife can exist and multiply.

I am also afraid that we as individuals do not do our part to see that the hunting and fishing laws are obeyed. Oh yes, we ourselves would not break the laws, but suppose others in your group do. Do you take a stand to help enforce the laws and also protect the landowners?

The landowner seems to be such an unimportant fellow in the eyes of many sportsmen, but if we stop and think he is No. 1 in importance. If one percent more of the landowners would decide to post their land there are thousands of sportsmen in our state who would have to stay at home.

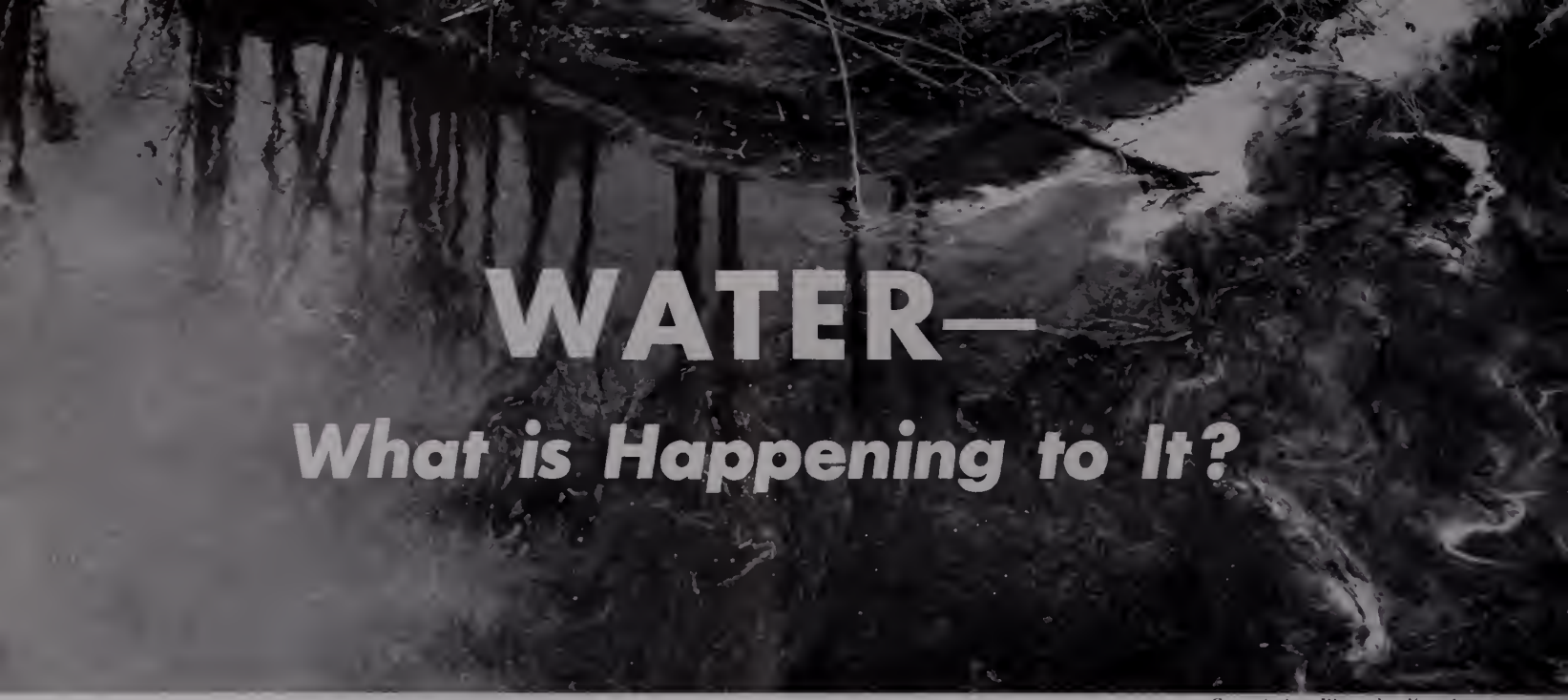
As a taxidermist's wife who sees and realizes that more and more landowners are posting their land, I know this is due to broken fences, gates being left open, taking more game than is legal, shooting too near houses and cattle and many other complaints. Let's all work hard at being good outdoorsmen. It will lend continued recreation for you and keep our taxidermists, of which there are quite a few in our state, in business.

Frances Bell Jackson
Jackson Taxidermy Studio
Falls Church, Virginia

"Shenandoah Smallmouths" Fan

THE story in your August issue by Don Carpenter, "Shenandoah Smallmouths," could not have appeared at a more appropriate time for me. Only a week before reading it I had been taken for a day's fishing in the South Fork of the Shenandoah, about 10 miles upstream from Luray. The happy result was such that I can endorse Mr. Carpenter's opinion of the river and its smallmouth bass 100 percent. That day's fishing was one of the best, most exciting, and generally most pleasant I have ever enjoyed. It was almost as much fun to watch a 14 or 15-inch bass come out on his tail and pitch my Abu spinner back at me as it was to bring one to net. It took me a long time to get into the Shenandoah for the first time; now my idea of going fishing is to go right back!

Howard B. Bloomer, Jr.
Lorton, Virginia



WATER—
What is Happening to It?

Commission Photo by Kesteloo

Many of the nation's streams, including some of the large ones, already are little better than open sewers.

By R. L. NACE, *Associate Chief, Water Resources Division*
Geological Survey, U. S. Department of the Interior

FEW people who are responsible for water need reminders that water and water planning are important matters. A number of states are actively developing water policies and plans. In recent years the Congress has strongly emphasized planned development. Why is concern about water so widespread?

The nation is not short of water. The yearly income of water from precipitation, averaged for the 48 contiguous states, is ample, amounting to about 30 inches. About 21 inches (70 percent) of this water returns to the atmosphere by natural evaporation. The remaining nine inches is the theoretically manageable supply. Only three inches—a third of the manageable supply—actually is withdrawn from streams and the ground. Out of the three inches that are withdrawn, one inch is consumed by evaporation and transpiration, and two inches returns to streams and reaches the sea. Thus, the total that finally escapes to the sea is eight inches, or 27 percent of the total income and nearly 90 percent of the manageable supply.

The water use situation is equally interesting. Industrial and irrigation withdrawals are about equal, disregarding conveyance losses in irrigation, but 60 per cent of irrigation water is consumed, while only 2 percent of industrial water and 10 percent of public water is consumed. Irrigation accounts for 80 to 90 percent of all water that is consumed artificially.

Considering the nation as a whole, the water problem cannot be a problem of total water quantity, because we withdraw only a third of the manageable supply and consume only a tenth of it. Therefore, the national problem must be one of water management and use, not of water supply. (In this context, "management" is a collective term for all the people who by legislation, by use of authority, by application of rules, by legal decision, or by other means prescribe action or take action. The "manager" is the man who makes decisions about water, as well as the man who carries out a plan of action for water development, use, or conservation. This working definition is important to bear in mind throughout this discussion. The Geological Survey is not a manager.)

The water situation described is, of course, a "national-average situation." In an area as small as a state, inequalities in the natural distribution of water lead to real and undeniable local and regional shortages of water. A favorable national, regional, or state average supply has only ironic interest for the man whose crops are dry or for the city whose reservoirs are empty.

Each drought is a repetition of history. Though the time of a drought cannot be predicted, the recurrence of drought is a long-range certainty, and it can be provided for by management. Scientists must provide water managers with the means to foresee, or with actual forecasts, and with information about sources and means to forestall unfavorable contingencies. This is the job of scientific agencies like the Geological Survey.

Shortage in the Midst of Plenty

Current predictions from various sources indicate that the national withdrawal of water in 1975 or 1980 will be double the withdrawal in 1955. Withdrawals and artificial consumptive use could be doubled and still remain well within the national average manageable supply. But water withdrawal could not be doubled in all parts of the nation except by a complicated and fabulously expensive system of regional transfers of water from basin to basin. In some parts of the Southwest, water use may have to be reduced within the next generation because stored reserves of ground water will not last indefinitely.

On the whole, however, the national water-withdrawal pattern is wasteful to a large degree, and forecasts about the future need be gloomy only if they assume that much wastefulness will continue. Records of water use, however, make it obvious that much of the prospective increase in water demand could be met simply by more efficient use of the water

Adapted with permission from an address given before the Texas Water Conservation Association, Dallas, Texas, on October 19, 1959.

already withdrawn. Increased demand already has been met by improved efficiency of use and reuse in several plants in the steel industry. It has been met by public supply systems where waste water is reclaimed and reused. Another good illustration is the petroleum industry. About 41 barrels of water must be circulated to process one barrel of crude oil. In some plants the circulation is all new water. For the industry as a whole, about 27 percent is new water; but where short supply forces conservation and reuse, only about 5 percent is new water.

Conservation Includes Quality Control

Most uses of water, except for power generation, damage its quality; they raise the temperature, alter the chemical nature, add to the suspended sediment load, or all three. Industrial chemical waste, sewage and other organic contaminants, salts leached from the soil of irrigated areas, sediment produced in areas where man has disturbed the plant cover, all depreciate the quality and usability of water. This problem is beginning to loom large. Many of the nation's streams, including some large ones, already are little better than open sewers. An unfavorable salt balance is evident in some irrigated areas of the West, and so on. These kinds of problems have been widely publicized. Many of them can be overcome by control of wastes and by water treatment. That is, quality control can be improved by liberal applications of technology and dollars, and by leaving enough water in streams to dilute the unavoidable waste.

In other words, control of the quality of water also is a problem of management. The quality of stream waters will be as bad as management permits it to become, or as good as management demands that it shall be.

The Long-Range Responsibility of Management

It seems clear that, whether one's viewpoint is national, regional, or local, problems are not simply "water problems." They are water management and use problems and more and more they will involve political philosophy and economic and sociologic factors. Therefore, it seems essential that water planners and managers—all the people who make decisions —take a fresh look at large-scale developments and long-term commitments of water, and make sure that they recognize the real long-range problem.

U. S. Forest Service Photo

Anything which is abundant is used wastefully by man. The time has come when water must be managed, not merely manipulated. (Virginia's New River is shown above.)

During the next 20 to 30 years, the principal problems will be efficient and effective use and control of water, and quality control. These problems fall in six general categories: distribution, quantity, chemical and sediment, pollution, floods, and variability of streamflow. Not all six are problems everywhere. The principal problem, however, is economic. Can we afford, or will we accept, the cost of what is to be done? Since water is an absolute necessity, man will pay whatever it costs to get it.

Seemingly, then, the water planner has a greater responsibility than to plan series of projects for construction during the next 20 to 30 years. The more important responsibility is the kind of a situation and problems that will be handed over to the manager who takes over 30 years from now.

Unless development projects and commitments of water are closely coordinated and based on sound estimates of the kind of civilization for which water will be needed far in the future, the water manager of the future will have an extremely difficult task.

Let us consider now how the work of a scientific agency like the Geological Survey is related to management problems.

The Mission of the Geological Survey

The mission of the Geological Survey is scientific. In our water resources program, we collect basic data as the raw materials with which to work; we analyze and interpret the data and express their meanings in water supply appraisals; we determine and analyze the processes and factors which control water in natural and artificial environments, and we express these factors in terms of scientific principles; and we publish this information. The work of the Survey with water, in short, provides a scientific basis for water management.

In the case of specific developments, it provides the scientific means for determining the consequences of management actions that have been taken, for predicting the consequences of actions that may be taken, and for choosing between alternative actions. The decision, whether to accept these consequences or not, is a management responsibility. We wish to assure, however, that the manager, when he decides, understands the implications and results of his decision.

He may "decide," for example, to increase the dependable supply of water by building another dam on a stream. The unplanned effect of the structure may be to increase total evaporation loss without increasing dependable supply at all. This consequence is readily predictable. As the total reservoir capacity on a stream system increases, evaporation losses rise. There is a determinable point at which evaporation offsets the gain in storage on large reservoir systems in the West. It should be clear, of course, that evaporation is only one factor, and one example. Many other factors must be considered because there may be perfectly good reasons for accepting evaporation losses.

Gauge height and streamflow records, chemical quality and sediment transport records, and records of ground water levels are examples of the basic data we collect. The several million square miles of the nation are underlain by many ground water bodies, but we have less than 30,000 regularly measured observation wells. The continental United States, excluding Alaska, contains more than three million miles of rivers, but the number of gauging stations is less than 7,000. The number of sediment stations is about 400, and of quality

U. S. Soil Conservation Service Photo

Streamflow declines and increases, fluctuating through a considerable range in its long-term trends. During each of the downswings, people become alarmed . . .

stations less than 900. Because the number of stations is so small, very few construction projects have been served by as many stations as would be desirable. It has taken nearly three quarters of a century to build up the basic data network, but if the number of stations were doubled overnight, coverage of the nation for project purposes still would be incomplete.

The data program must be expanded, but it would be neither feasible nor desirable to develop a data network that would provide information directly for even a majority of development projects. Moreover, that isn't necessary. By analysis of data, use of scientific principles, and liberal applications of scientific talent and imagination, a few stations can be made to do the work of many.

Many people think of "water resources investigations" largely in terms of data collection. But data collection is only a process of writing one form of history. Resource investigations must do more than compile undigested records of what happened yesterday or last year in a natural water system. That is only the first small step. The next step is to determine *why* it happened in that way, at that place, and at that time. That is, what were the factors and principles that controlled the water system? The third step is to determine, on the basis of the knowledge gained, what is apt to happen in the future. A further step is to predict what effects will be imposed on the system by development projects or other management actions. Each step beyond the first is apt to be exceedingly difficult, but each step must be taken to enable management to progress beyond guesswork in development. For data to have real value, therefore, we must squeeze from them every possible shred of scientific meaning.

The occurrence, the quality, the quantity, the behavior, and movement of surface water, as well as of ground water, are controlled by the environment of the water. In fact, our classification of the two principal kinds of water, underground and surface, is based on the environment in which they occur. That environment is geological. Geology has the same relation to natural water that a public water system has to the public water supply. That is, geologic features constitute the natural plumbing system of an area, and they must be studied along with the water. Studies on small watersheds, the effects of upstream small dams, and the effects on water supply of land-management practices, for example, will never be complete without careful, correlative geologic studies.

The kinds of data and scientific information that are needed for water development can be gotten only at considerable expense. Knowledge is costly, but it is cheap compared to the cost of ignorance and because it can eliminate the high cost of guesswork in the construction of projects. The important need is not for massive accumulations of data, but for understanding. The data must be of the right kind, collected at the right time and at the right places.

What is Happening to Our Water?

Water is the most common of all substances on the surface of the earth. Why, then, are "water problems" displacing the weather as a topic of general conversation? Is there a factual basis for the widespread popular belief that ground water levels are declining ominously throughout the country? Has the climate become much drier, so the streamflow is declining and ground water supplies are failing?

World-wide experience and all recorded history show that anything which is abundant is used wastefully by man. In the case of water, we have been using, misusing, polluting, and generally abusing it as though there would never be a tomorrow. The essential current water problem is this: The time has come when water must be managed, not merely manipulated. It must be managed with an understanding that there *will* be a tomorrow, and a very long one, we hope.

Water tables *have* been lowered at many places in the country. Whether this is good or bad depends on many factors. In general, however, one cannot dip water out of nature's bucket and still have the bucket full.

Geologic evidence from the past shows that climate, like other natural phenomena, fluctuates. In general, however, these fluctuations are so slow that they are very difficult to detect. As for streamflow, it declines and increases, fluctuating through a considerable range in its long-term trends. During each of the downswings—and we are in one now—people become alarmed. During the upswings, optimism is restored and the lessons of the past are ignored.

Sufficient water is available for present needs and for a very large increase in use. Too much water has been used

U. S. Soil Conservation Service Photo

But during the upswings, optimism is restored and the lessons of the past are ignored. The problem is: What can we afford to spend to redistribute water?

wastefully and shortsightedly in the past, but conservation and farsighted scientific management are essential. Nature distributes water poorly, for our purposes, but enough water is available so that artificial redistribution can meet many local problems. The basic real problem is economic: What can we afford to spend to redistribute water? New development cost could be reduced by more efficient use of supplies that are already available. A most important problem during the near future will be that of improving control of the chemical quality and suspended sediment in water for all purposes.

The water program needs of the country as a whole:

- Careful appraisal of the total water supply including ground water available and the extent to which it can be managed for best use.
- Thorough analysis of the present water situation in terms of total water use; natural consumptive use; artificial consumptive use; waste or escape of water that might be recovered; effects of man's activity on runoff, water supply, ground water recharge, erosion, and sedimentation; and sources and quantities of natural, industrial, and sewage contaminants.
- Determination of where we are headed in water use and where we ought to be headed.
- Development of a program to get where we want to go: means to control and guide our water destiny.
- Finally, a plan of action to carry out the program. This should be more than a list of projects and construction schedules; it should include action to get and make the most of scientific information.

Where do the functions of the Geological Survey fit into this picture of the future? A good development program and a plan of action must be based on scientific evidence of how much water is available, where it is available, and what kind of water it is. We propose to continue to obtain this kind of information and to translate it into terms that are useful to water managers. The Geological Survey does not build dams, develop irrigation projects, or move earth to change water courses, but we do deal with the kind of information that is needed by people who do accomplish such things.

What To Do When You Sell A Numbered Boat

Some boat owners seem to be having trouble figuring out what they have to do when selling their boats to comply with the new Virginia Boating Safety Act.

When a person sells or gives his registered boat to another person or to a boat dealer, he is required to: (1) notify the Commission of Game and Inland Fisheries on the official form (obtainable from game wardens) within 15 days and (2) return the certificate of number to the Commission. Thereafter, he will have no further responsibility for the boat or the certificate of number. The boat, however, retains its original number.

When a person buys a boat which is required to be registered—if he plans to operate the boat with a motor of 10 horsepower or more—he is required to register the boat with the game commission. If the boat had been previously registered, he applies for a new certificate of number, indicating the state number already assigned to the boat on the application form. The new certificate will be issued by the Commission upon receipt of a completed application form and the transfer fee of one dollar.

When a person buys a boat with a number painted on the bow and does not plan to use a motor of 10 horsepower or more on it, he does not have to apply for a certificate of number nor does he have to remove the number. The number stays with the boat throughout the boat's life, whether it is registered or not.

When a boat owner changes the motor on his registered boat, he does not have to notify the Commission of this change, but should note any change in type of propulsion or type of fuel used when renewing his certificate of number.

Virginia . . . Where the Buffalo Roamed

By GEORGE H. HARRISON
Feature Editor

IMAGINE what it was like in Virginia when the first settlers arrived. What a lush, green wilderness it must have been.

Tremendous forests and vast pasturelands abounded with wildlife. In those fertile pastures it was not uncommon to see herds of bison, or buffalo, as they are commonly called. These huge animals lived throughout the state except along the coastal plain.

Now the buffalo is gone from Virginia, gone from all America except for a few managed herds in the West.

The last buffalo reported in Virginia was seen in 1797 by Nathan Boone, son of Daniel Boone, along the New River in the western part of the state.

In spite of the fact that the animal has been gone for almost 200 years, we can still easily find evidence of its past existence. The buffalo left his name in many communities in Virginia: Buffalo Forge, Buffalo Gap, Buffalo Springs, Buffalo Ridge, Buffalo Station, and Forks of Buffalo.

Also we find several Buffalo Rivers and Buffalo Creeks in the state along with the Bull Pasture, Cow Pasture, and Calf Pasture streams. These are said to be places where the bison were often seen.

In June 1613, Sir Samuel Argoll, writing of a trip up the Potomac River, said: "And then marching into the Countrie, I found great store of Cattle as big as Kine, of which the Indians that were my guides killed a couple, which we found to be very good and wholesome meate, and are very easie to be killed, in regard they are heavy, slow, and not so wild as other beasts of the wildernesse." (Purchas: *His Pilgrimes.* Vol. 4, p. 1765. 1625.)

Goode (1896) mentions that buffalo still abounded in the vicinity of Charlottesville at the time of Thomas Jefferson's birth, and that a calf captured in the Blue Ridge nearby was presented as a gift to the Governor of the state in 1733. He further stated that "a trail frequented by the buffalo herds crossed the Blue Ridge at Rockfish Gap, 24 miles west of Charlottesville, passed the Shenandoah at a ford near Staunton, and afterward over the next range by a passage still known as Buffalo Gap, into the beautiful valleys, then as at present called the Cow Pasture and the Calf Pasture . . ."

Buffalo were common in the Mt. Rogers area of Virginia, too. In 1750, Dr. Thomas Walker led a surveying party through southwestern Virginia as far as Cumberland Gap. In his journals he states: "We killed in the Journey 13 Buffaloes, 8 Elks, 53 Bears, 20 Deer, 4 Wild Geese, about 150 Turkeys, besides small Game. We might have killed three times as much meet, if we had wanted it."

Even today in the Elk Garden area of Mt. Rogers, the remains of a once huge buffalo wallow can be found being used by the cattle that now graze that land.

Man can successfully restock deer and turkeys but not buffalo. It is gone from the wild forever. Its awkward size and cattle-like habits have no place in our modern civilization. The only hope for this creature to thrive is under controlled and managed conditions on a refuge. He must be treated like a farm animal, because the wilderness pasture lands and prairies are things of the past.

Although the buffalo was on the verge of extinction, it is now doing well in our national parks and refuges. Wichita National Wildlife Refuge at Cache, Oklahoma, has the largest herd in the world with more than 800 animals. The National Bison Range in Montana and Wind Cave National Park also have large herds.

Each year these herds produce many calves, and an equal number of adult buffalo are harvested and sold to hotels, restaurants, and private concerns for human consumption.

Yes, that big bushy head and inefficient little tail are things of the past in the wilds of Virginia and America. Time is the eternal changer, and the wild buffalo ran out of time.

Photo by George H. Harrison

Virginia's Cow Pasture and Calf Pasture Rivers were named after buffalo cows and calves like these.

"No more terrible story of discord can be found than that of the passing of the buffalo."

U. S. Soil Conservation Service Photo

The Passing of the Buffalo

By ROBERT H. GILES, JR.
Former District Game Biologist

PENETRATING throbs of a dance drum made the night darker, the fire brighter. In a forest vale an Indian danced the story of a people dependent upon an animal and of their fate when that animal was no more. The Indian, in a natural predator-prey relationship, lived in harmony with nature. This harmonious relationship he expressed in his dance.

I saw an Indian dance one night.
I saw an Indian dance;
And all the natural powers of life came clearly into light.
I saw the steps he took that night.
I saw the steps he took;
And pagan soul in a scanty fold he whirrled into light.

* * *

From the tread of dusty moccasins and the graceful, bold, yet constrained movements of a bronze body came the story of the buffalo—its life, values, and disappearance.

Around countless campfires, elders had repeated stories of the vast herds of buffalo that roamed the forests and plains from ocean to ocean. Great shaggy beasts they were, grazing the pristine prairie, shaking off swarms of insects, and rolling in the dust and dung of a thousand animals that passed before them. Standing when caring for calves, or running at thundering speeds when startled, they provided life itself for the Indian. He ate buffalo meat; lived within and covered himself with its hide; made scrapers, clubs, containers, needles, holding pins, and dolls with its bones; sucked its bone marrow; wove its hair; greased with its fat; drank from paunch water bags; and carried possessions in boxes made from thick neck skin. The buffalo was the roving raw material for America's Indians who killed from the herds for their needs. Many of their techniques were wasteful, but, all told, the Indian did not harvest more than the surplus. His harvest helped keep the herd within the ability of the range to support it. The Indian and buffalo lived as one, each benefiting the other.

The calm, grace, and vigor of the dance was interrupted by hesitation and irregular movements—a change of pace. The encroachment of the European and the winning of the frontier was reflected in the dance.

The railroad, the repeating rifle, the market hunter, all took their toll. The bones of hundreds of thousands of free-running, life-giving buffalo dotted the plains. Massive carcasses were left after the hides were removed and freighted to the East. Many were killed only for "target practice," others for their tongues which were considered delicacies. Bloody bodies lay blown and bloated in knee-deep grass while at night wolves and coyotes with swollen bellies howled out their songs of fitful satisfaction.

Small herds disappeared, larger ones scattered and became more difficult to find and to hunt. Groups of plants, animals, and birds associated and living with the buffalo changed. Drastic changes in these inter-related communities became evident, not the least of which was the new, difficult place of the Indian. Disease, starvation, lack of basic needs and the inability to adapt rapidly to the new conditions preyed on him. The buffalo poverty was on.

Sudden flurries of violent dancing were interspersed with slow and somber movements characterizing the last attempts to hold back the gradual disappearance of the bull, cow, and calf. The dance was deliberate as it continued its story.

Bonfires and hunters, whites and Indians alike, lined the banks of a western river against whose bank pawed an anxious herd of buffalo. As the thirst of each animal reached its limit it broke for water and was shot in the light of the hunters' fires. This was the last of the significant buffalo herds.

* * *

Harmony between man and nature has and always will be a requirement for survival. Man's dependence on resources, whether they be buffalo or oil strata over which these animals stamped, must be recognized and steps taken to insure their perpetuation if man is to survive. No more terrible story of discord can be found than that of the passing of the buffalo. The great beast is a symbol of resource abuse—an abuse that can result in the destruction of any resource and of the people who depend upon it.

American Forest Products Industries, Inc., Photo

In 1959 alone, some 27,000 pine trees were planted for wildlife on the George Washington National Forest by Virginia Game Commission personnel.

Conifers for Wildlife

By ROBERT H. GILES, JR.
Former District Game Biologist

EARLY in the active program of managing lands for increased wildlife production, planting of evergreen trees was recognized as a valuable technique. Tree planting was one of the first practices used in the continuing cooperative program between the U. S. Forest Service and the Virginia Commission of Game and Inland Fisheries which was initiated on national forests in Virginia in 1938.

Thousands of trees have been planted on the two Virginia national forests. In 1959 alone, some 27,000 pine trees were planted on the George Washington National Forest by game commission personnel.

Conifers have many values for wildlife, most important of which is their value as cover. An increase in wildlife food and cover on an area results in an increase in that land's ability to produce wildlife. Pines, spruces, and hemlocks provide valuable cover—protection from wind, rain, and snow. They also serve as escape areas; predators or hunters cannot see game hiding in these dark and cool coverts. The conifer patch near at hand to feeding grounds provides a place to escape into when danger appears.

Only a limited amount of food is provided by the conifers. Hemlock and spruce needles are eaten by grouse and turkey, as are some buds and the seeds when available. Small mammals often collect such seeds and store them just as acorns. Insects and rodents found only in the conifers provide food variety for game birds and animals.

Variety is important in providing game food. "Edge effect" is a term used by wildlife managers to mean the resultant increased numbers and kinds of game found where two types of plant groups come together. Generally, the edge where the field meets the forest is more abundant with wildlife than the deep forest or the center of the field. Where conifers meet other trees or fields, edge is formed, and wildlife numbers will be found to be higher there. The game manager takes advantage of this phenomenon and plants pine and spruce trees to provide food, cover, and this variety of vegetation; the higher game animal population which results is the edge effect.

Investigations of areas where game is most abundant have revealed which combinations of plant types are most productive. In New York, the best grouse habitat is composed of mixed hardwood-conifer forest with slashings, brushy land, and open land. Sixty percent of the total area should be of mixed hardwood and conifers to provide ideal year-around habitat. The ruffed grouse depends on conifers primarily in the winter and spring. Conifer cover in second-growth hardwoods provides excellent fall range. Grouse seldom penetrate more than 200 feet into solid pine forest.

Deer often eat planted stock. On areas of heavy deer populations, planting conifers for benefit to other game species has become very expensive and impractical. The deer population has become a factor definitely limiting many habitat improvement practices; the big decision that must be made today is no longer "Will it benefit a particular species of game?" but "Will it survive the deer browsing?"

In the national forests, conifers have usually been planted near clearings or openings in the forest. Pine thickets of 50 to 100 trees planted in clearing corners provide snow protection, escape cover, and, where the openings are near roads, screens against road hunters and poachers. Some larger plantings have been made with the idea of establishing increased conifer forest acreage, bringing the entire area into more desirable game habitat.

Besides game benefits, these trees are producing forest benefits. Some plantings are approaching merchantable size. Silvicultural practices on the two Virginia forests frequently encourage mixed stands of timber. Pines do well on many of the drier, poorer slopes. Some value is derived from the clearing thickets, for these protect the exposed forest edge from drying winds and help retain moisture. Conifers provide watershed protection by stabilizing soil, permitting rainfall to enter the soil, adding organic matter, retarding runoff, and transpiring excess waters. Not to be overlooked are the scenic and recreational values of such plantations.

The author was assisted by other Commission biologists assigned to the national forests in the preparation of this article.

Recent research into the technique of planting conifers for wildlife has resulted in more effective use of this old technique. R. L. Smith, reporting in the July 1958 *New York Fish and Game Journal,* disclosed that spruce provide the best cover for rabbits and grouse in snow because of the tent-like shelters beneath the trees. Rabbits make little summer use of plantations, but smaller plantations are heavily used by rabbits in winter. Smaller plantations of one to five acres tend to lose their wildlife value as the trees reach 12 to 15 feet in height. Ground cover tends to disappear when the trees reach this height. Experimental topping of pines has been tried on the Pedlar and James River Districts of the George Washington National Forest but not enough time has lapsed to evaluate the practice.

Commission Photo by Kesteloo

Large stands of old, even-aged conifers are of little value to wildlife.

Commission Photo by Shomon

Game managers plant spruce trees at edges between fields and hardwood forests to provide wildlife with protection from weather and predators.

Smith also reports that plantations 10 acres or more provide the most benefit to wildlife, but that such plantations must have interior openings or clearings. Grassy fire lanes and brushed-edge roads provide such openings. Solid blocks of conifers of 10 acres or more are of less value to wildlife. Again, the edge effect is observed. Spacing trees 10 feet by 10 feet is recommended because this will benefit game over a longer time. Smith recommends planting a border of spruce around pine plantations to maintain lower branches and the resultant game cover, as well as to protect the forest.

Based on the research literature of Frank Edminster, R. L. Smith, and James Bailey of New York and on field observations and experiences of Virginia Commission biologists, the following recommendations employing the technique of conifer planting for wildlife in the forests of Virginia are made:

1. Plant conifers for wildlife in blocks of between five and 10 acres in size. Larger plantings should include openings and clumps of hardwoods such as apple trees, hawthorn, and walnuts. Smaller plantings should be close to other conifer patches.
2. Plant red, Virginia, and white pine on areas suited for their growth. Use several species in a plantation but plant in large patches of single species, in alternating rows.
3. Plant spruce on higher elevations around the edges of pine plantations and in clearings and forest openings.
4. Space trees 10 feet by 10 feet in large plantations. In small plantings, such as in the corners of clearings, space four feet by six feet.
5. By planting over a period of several years, encourage uneven-aged stands of conifers.
6. Where large plantations are made, maintain fire lanes and strips to provide hunter access and increased grass area for grouse and rabbits.
7. Pruning should be restricted to only the best sites and highest value timber. Light thinnings within a stand are generally beneficial. Do not prune edges of plantation; cover is preserved and wind penetration is reduced.
8. Encourage native pine regeneration in selected areas to obtain a mixed stand of hardwood and conifer.

As with other wildlife techniques, conifer planting is not a cure-all. Too much conifer area can be as detrimental as—if not *more* detrimental than—too few conifers.

GUEST EDITORIAL (Continued from poge 3)

Conservationists are important customers of the paper producing industry. Much writing, under the caption CONSERVATION, as a device to attract public interest, is fraudulent.

Yes, it is an educational experience to re-explore the conservation hope chest one started as a young man, with the parade of events and personages passing in review. And there is an emotional involvement in recalling days when one was a dreamer of great dreams, when there were dragons to fight, and the entire conservation effort was a battle to be won and wrapped up in a neat package—in just a few more years!

Now one wonders where the time has gone, what went amiss in those well-laid plans, and what caliber of youthful sinew will carry on.

The true conservationists must be lovers of lost causes, or they won't persist. In not admitting a cause is lost—the cause is often won.

—Ernest F. Swift

Bird of the Month:

The American Egret

By DR. J. J. MURRAY
Lexington, Virginia

THE changing status of the American egret in the past few decades is one of our most dramatic conservation stories. At the end of the last century, the bird was abundant through the southeastern states. But in the early years of the present century, when milliners set the fashion of waving plumes on the hats of women, this fine bird was driven almost to extinction. Down in Florida and even in its South American haunts the bird was mercilessly hunted. When the consciences of women became uneasy, the milliners told them that the plumes were collected from the ground in the rookeries where the birds had shed them. As a matter of truth, shed plumes were of little value. Plume hunters with shotguns cleaned the adult birds out of the rookeries during the nesting period when the plumes were at their best, leaving the young to starve in the nests.

Nesting areas where once the trees were white with nesting egrets were denuded. Soon the species was in actual danger of extinction. Conservationists led by the National Audubon Society and its fighting head, Dr. T. Gilbert Pearson, went to work. The battle against entrenched greed and business profits was long and bitter. Women's groups, finally awake to the evils in which they had been sharing, gave powerful help. The bird was saved. Now, 50 years later, the egret is again abundant from Florida to Virginia and Maryland. With the tendency of herons and egrets to wander northward and westward after the breeding season, the great white birds may now be seen in late summer in the Valley of Virginia and northward into the New England states.

Handsome at any season, with its snow-white feathers and long yellow bill, the egret reaches a peak of beauty in the nesting period. Then, the feathery white aigrettes appear on its wings and plumes on its head, until each bird is like a great fairy. The American egret decorates the marshes and roadside pools through all the southern states. Along with it in the more southern parts of its range is often seen its smaller and even lovelier relative, the snowy egret, with black legs and golden feet.

Egrets nest in colonies, some of them containing hundreds of pairs. The nest is a flimsy looking but thoroughly adequate pile of sticks with little lining. There are usually four chalky blue eggs, almost as large as hen eggs. Trees will have many nests crowded together. The rookery or heronry, as the colonies are called, is often located over water. In far southern swamps alligators wait below for the young that sometimes fall out of the nests.

A heronry is a madhouse of squawks and calls, but with the swirling mass of snowy birds it is a beautiful madhouse. The young are almost naked at first, gawky, and until they leave the nesting area ugly, as great a contrast as could be imagined to their lovely parents.

VIRGINIA WILDLIFE

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CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

SEASONS AND BAG LIMITS ON DOVES AND RAILS ANNOUNCED. The Virginia game commission has set a 70 consecutive half-day season on doves from September 15 through November 23. Hunters will have five more days than last season in which to draw a bead on the popular game bird whose numbers are up five percent over 1959 in the eastern management unit. The commission was also able to liberalize dove bag limits with a daily bag of 12 and 24 in possession. Last season it was a daily bag of 10 and 20 in possession. Shooting hours are from 12 o'clock noon to sunset on the dove.

Other migratory game bird regulations: Rails and gallinules can be hunted from sunrise to sunset, September 1 through October 31. The daily bag limit is 15 and the possession limit is 30. Sora rails, a separate species, has a daily bag and possession limit of 25. Wilson's snipe may be hunted from sunrise to sunset, November 21 through December 20. The daily bag and possession limit is eight. Woodcock can be hunted November 21 through December 30. The daily bag limit is four, with eight in possession. Shooting hours are sunrise to sunset.

NEW GAME LAW SUMMARY AVAILABLE NOW. The game commission's "Summary of Virginia Game Laws--1960-1961 Season" is off the press and available now free of charge from the Commission at P. O. Box 1642, Richmond, and at all hunting license agencies. The blue, 14-page digest, slightly smaller than its predecessor, now has exactly the same dimensions and typography as six other free game commission publications which were standardized by the Commission's Information Section for mailing in a No. 6¾ envelope as well as for carrying easily in a shirt pocket or wallet.

Changes from the 1959-1960 game law summary include license fee increases (to $2.00 for county or city resident to hunt and fish in county or city of residence, $5.00 for nonresident big game license, and the requirement that "county license" holders buy $1.00 big game licenses), prohibition of firearms on five western Commission-owned wildlife management areas during the general closed hunting season, prohibition of the hunting of deer with dogs in Loudoun County, reduction in the number of deer bag limits from 11 to six, and a change in the raccoon trapping season in several Tidewater counties from December 1-March 31 to October 1-January 31.

BOAT EQUIPMENT REQUIREMENTS CARD AVAILABLE. A pocket-sized card summarizing all safety equipment requirements including lights for all four classes of motorboats is now available to the boating public free of charge from the Virginia Game Commission at P.O. Box 1642, Richmond. Designed originally for use by game wardens and other peace officers enforcing the new boat safety law, the tough, white card is also ideal for private boat owners' handy reference.

GAME WARDEN APPLICATION CHECK YIELDS 61 CONVICTIONS IN NORTHERN VIRGINIA. "Making a false statement to secure resident hunting or fishing license" was an oft-heard charge in northern Virginia courts during the month of June. A total of 61 persons from the Arlington-Fairfax area were found guilty of this offense and fined a total of $2,027.75 during the month. Most of them were arrested by state game wardens Gene Altman and Gordon Wilkes of Fauquier County and F. C. Boggs of Spotsylvania County after an intensive check of license applications. In all, the coffers of the state literary fund were enriched by $7,126.00 during June by fines paid by 85 game law violators and 414 fish law violators, who were also charged $3,094.25 for court costs.

State game warden T. A. Daniel of Leesburg was relieved of dog law enforcement responsibility on July 1 when a full-time dog warden for the county of Loudoun went into action. Some 74 Virginia counties now enforce their own dog ordinances.

Chow times at the spotless Camp Pickett mess hall were welcome breaks in the intensive training schedule. Shown facing camera: wardens Morris, Bellamy and Foster.

"Writer's cramp" was the game warden's occupational hazard at the boat school. Frequent quizzes kept wardens Newman, Allen and Simmons (above) and the others "on their toes."

Above, warden McLeod practices artificial respiration on warden Jamison during first aid session. Below, wardens Birkett and Simmons review outboard motor maintenance.

At the opening session of the five-day boating school, wardens were c... attention to the dedicated ...

Game Wardens Trained ...

The passing of the Virginia Boating Safety Act of 1960 by the General Assembly of Virginia this spring meant that the state's 134 game wardens would have to assume additional duties come July 1 for the General Assembly assigned the Commission of Game and Inland Fisheries the job of implementing the provisions of that act.

Instead of setting up a new division to handle the "boat business," the Commission decided to let its existing divisions shoulder the portions of the load which logically fell to them while appointing a staff assistant to coordinate the program. Under this setup, the fiscal division handles registrations, the education division produces and distributes boat safety articles, press releases, posters and films and keeps track of boating accidents, and the law enforcement division—the backbone of the organization in boat safety work as in game and fish conservation work—carries the ball in the field, seeing that the many provisions of the boat act and accompanying regulations are known and obeyed.

How to turn game and fish enforcement men into competent boaters ...

Photos by ...

Coast Guard Auxiliary instructors, using an army vessel, instruct wardens in c... game commission boat how to handle inspections.

ed by law enforcement division chief Webb Midyette to give their full
rs they were later to hear.

Enforce New Boat Law

and boat law enforcement agents "overnight" was the problem the Commission faced. Its answer was to hold an intensive five-day training school for the wardens who have a considerable amount of water in their work areas.

Lt. Col. W. C. Huber, camp commanding officer, and the 2nd United States Army kindly offered the facilities of Camp Pickett to the Commission for the training session, and these facilities—barracks, mess hall, classrooms, lakes and boats—proved ideal.

On June 26 through 30, 54 members of the Commission's warden force were given intensive training in boat handling, seamanship, navigation, boarding and inspection, safety, first aid, boat law and public relations by members of the U. S. Coast Guard Auxiliary, the Virginia State Police and other competent instructors.

At this meeting it was announced that all game commission vessels used for boat law enforcement will fly the state flag and have the words "Virginia Patrol" painted on their bows, and that all wardens shall be in uniform when on boat law enforcement duty.

I. Harrison

Experienced Coast Guard Auxiliary instructors included Forrest Brauer, Jack Epps, Hamlet Funai, Day Lowry, John Lydiatt and Dr. W. C. Hancock.

Game Commission staff assistant Stuart P. Davey, who is coordinating Virginia's boat registration program, organized the school and "kept the show on the road."

The wardens appreciated the informative session on boat law taught by University of North Carolina lawyer Dexter Watts, shown above conferring with staff assistant Davey.

Above, Sgt. Al Holcomb of the State Police Training School at Richmond gave the wardens public relations pointers. Below, Chief Midyette presents warden Denney with his certificate of merit for passing the course.

A List of the Fishes of Virginia

Names used are those found in *A List of Common and Scientific Names of Fishes From the United States and Canada*, Second Edition (Am. Fisheries Soc., Ann Arbor, Mich., 1960). Freshwater game species (names in CAPITAL letters) may be taken only by properly licensed persons under regulations enforced by the Virginia Commission of Game and Inland Fisheries. Number in parentheses indicates source of record: (1) *A Check List of Fishes of the Virginia Waters of Chesapeake Bay and its Tidal Tributaries* by W. H. Massmann (Va. Fisheries Lab., Gloucester Point, 1958); (2) *Game Fish Streams and Records of Fishes from the Potomac-Shenandoah River System of Virginia* and (3) *Drainage Evolution and Distribution Problems of the Fishes of the New (Upper Kanawha) River System in Virginia* both by R. D. Ross (Va. Polytechnic Institute, Blacksburg, 1959); (4) *The James River Basin*, Chapter on "Freshwater Fishes" by E. C. Raney (Va. Academy of Science, Richmond, 1950); (5) records of R. G. Martin, assistant chief of the Va. Game Commission's fish division; reports of collections from (6) Holston River by R. H. Gibbs, Jr., 1952; (7) Craig and Giles counties in 1952 and (8) Essex, King and Queen, King William and New Kent counties in 1954 both by E. C. Raney, Cornell University; (9) since 1956 by W. S. Woolcott, University of Richmond; (10) Tuckahoe Creek by D. A. Flemer, 1958; (11) James and Shenandoah rivers by E. H. Bullington, 1959; (12) Roanoke River and Big Laurel Creek by B. J. Abbott, 1958; (13) by J. W. Berry, 1958; (14) by H. H. Hobbs, 1953 and 1958; (15) by B. D. Perkins, Jr., 1958; (16) Roanoke and Shenandoah rivers by F. J. Schwartz, 1955-56; (17) by R. D. Suttkus, 1952; (18) by H. E. Winn, 1957; (19) Occoquan Reservoir by T. Dolan, 1958; (20) James and Shenandoah rivers by J. G. New, 1952; (21) *How to Know the Freshwater Fishes* by Samuel Eddy (Wm. C. Brown Co., Dubuque, Iowa, 1957; recommended identification guide); and (22) *Studies of the Catostomid Fishes of the Genus Moxostoma* by C. R. Robins and E. C. Raney (Cornell University, Ithaca, N. Y., 1956). List compiled by Hester C. Harrison and edited by Robert G. Martin.

PETROMYZONTIDAE

Lampetra aepytera (Abbott)—least brook lamprey (3, 4)
Petromyzon marinus Linnaeus—sea lamprey (1, 4, 9, 15)

CARCHARIIDAE

Carcharias taurus Rafinesque—sand shark (1)

CETORHINIDAE

Cetorhinus maximus (Gunnerus)—basking shark (1)

ORECTOLOBIDAE

Ginglymostoma cirratum (Bonnaterre)—nurse shark (1)

CARCHARINIDAE

Carcharhinus leucas (Muller and Henle)—bull shark (1)
Carcharhinus milberti (Muller and Henle)—sandbar shark (1)
Galeocerdo cuvier (Peron and LeSueur)—tiger shark (1)
Scoliodon terraenovae (Richardson)—Atlantic sharpnose shark (1)

SPHYRNIDAE

Sphyrna tiburo (Linnaeus)—bonnethead (1)
Sphyrna zygaena (Linnaeus)—smooth hammerhead (1)

SQUALIDAE

Squalus acanthias (Linnaeus)—spiny dogfish (1)

SQUATINIDAE

Squatina dumerili LeSueur—Atlantic angel shark (1)

PRISTIDAE

Pristis pectinatus (Latham)—smalltooth sawfish (1)

TORPEDINIDAE

Torpedo nobiliana (Bonaparte)—Atlantic torpedo (1)

RAJIDAE

Raja eglanteria Bosc—clearnose skate (1)
Raja erinacea Mitchill—little skate (1)
Raja laevis Mitchill—barndoor skate (1)
Raja ocellata Mitchill—winter skate (1)

DASYATIDAE

Dasyatis americana Hildebrand and Schroeder—southern stingray (1)
Dasyatis centroura (Mitchill)—roughtail stingray (1)
Dasyatis sabina (LeSueur)—Atlantic stingray (1)
Dasyatis sayi (LeSueur)—bluntnose stingray (1)

GYMNURIDAE

Gymnura altevela (Linnaeus)—spiny butterfly ray (1)
Gymnura micrura (Bloch and Schneider)—smooth butterfly ray (1)

MYLIOBATIDAE

Aetobatus narinari (Euphrasen)—spotted eagle ray (1)
Myliobatis freminvillei (LeSueur)—bullnose ray (1)

RHINOPTERIDAE

Rhinoptera bonasus (Mitchill)—cownose ray (1)

MOBULIDAE

Manta birostris (Walbaum)—Atlantic manta (1)

ACIPENSERIDAE

Acipenser brevirostrum LeSueur—shortnose sturgeon (1, 4)
Acipenser oxyrhynchus Mitchill—Atlantic sturgeon (1, 4)

LEPISOSTEIDAE

Lepisosteus osseus (Linnaeus)—longnose gar (1, 3, 4, 8)

AMIIDAE

Amia calva (Linnaeus)—bowfin (1, 3, 4)

ELOPIDAE

Elops saurus (Linnaeus)—ladyfish (1, 4)

MEGALOPIDAE

Megalops atlantica Valenciennes—tarpon (1, 4)

ALBULIDAE

Albula vulpes (Linnaeus)—bonefish (1)

CLUPEIDAE

Alosa aestivalis (Mitchill)—blueback herring (1, 4, 8, 9)
Alosa mediocris (Mitchill)—hickory shad (1, 4)
Alosa pseudoharengus (Wilson)—alewife (1, 4, 8)
Alosa sapidissima (Wilson)—American shad (1, 4, 8, 9)
Brevoortia tyrannus (Latrobe)—Atlantic menhaden (1, 4, 8)
Clupea harengus (Linnaeus)—Atlantic herring (1)
Dorosoma cepedianum (LeSueur)—gizzard shad (1, 3, 4)
Dorosoma petenense (Gunther)—threadfin shad (3)
Etrumeus sadina (Mitchill)—Atlantic round herring (1)
Opisthonema oglinum (LeSueur)—Atlantic thread herring (1)

ENGRAULIDAE

Anchoa hepsetus (Linnaeus)—striped anchovy (1)
Anchoa mitchilli (Valenciennes)—bay anchovy (1, 4, 8)

SALMONIDAE

Salmo gairdneri Richardson—RAINBOW TROUT (2, 3, 4, 7, 9)
Salmo trutta Linnaeus—BROWN TROUT (2, 3, 4)
Salvelinus fontinalis (Mitchill)—BROOK TROUT (2, 3, 4, 11, 12, 13)

OSMERIDAE

Osmerus mordax (Mitchill)—American smelt (5)

UMBRIDAE

Umbra pygmaea (DeKay)—eastern mudminnow (1, 4, 9, 10)

ESOCIDAE

Esox americanus americanus Gmelin—redfin pickerel (1, 3, 4, 9)
Esox niger LeSueur—CHAIN PICKEREL (1, 3, 4, 9, 10, 15, 16, 19)

SYNODONTIDAE

Synodus foetens (Linnaeus)—inshore lizardfish (1)

CYPRINIDAE

Campostoma anomalum (Rafinesque)—stoneroller (2, 3, 4, 6, 7, 9, 14, 18, 20)
Carassius auratus (Linnaeus)—goldfish (3)

Chrosomus oreas Cope—mountain redbelly dace (3, 4, 7, 9, 10, 13, 14, 15, 16)
Clinostomus elongatus (Kirtland)—redside dace (2, 3, 4, 7, 9, 10, 13, 14, 15, 16, 17, 20)
Cyprinus carpio Linnaeus—carp (1, 2, 3, 7, 19)
Exoglossum maxillingua (LeSueur)—cutlips minnow (1, 2, 4, 9, 14, 16)
Hybognathus nuchalis Agassiz—silvery minnow (1, 2, 4, 8, 9, 10, 14, 16)
Hybopsis amblops (Rafinesque)—bigeye chub (3, 9)
Hybopsis leptocephala (Girard)—bluehead chub (3, 4, 7, 9, 10, 14, 15, 20)
Hybopsis micropogon (Cope)—river chub (2, 3, 4, 9, 14)
Notemigonus crysoleucas (Mitchill)—golden shiner (1, 2, 4, 9, 10, 15, 16, 19)
Notropis albeolus Jordan—white shiner (3, 7, 9, 14)
Notropis alborus Hubbs and Raney—whitemouth shiner (21)
Notropis altipinnis (Cope)—highfin shiner (17)
Notropis amoenus (Abbott)—comely shiner (1, 2, 4, 9, 15)
Notropis analostanus (Girard)—satinfin shiner (1, 2, 4, 8, 9, 10, 14, 15, 16, 17, 20)
Notropis ardens (Cope)—rosefin shiner (2, 3, 4, 9, 14, 16, 18)
Notropis ariommus (Cope)—popeye shiner (6, 9, 14)
Notropis atherinoides (Rafinesque)—emerald shiner (3, 9)
Notropis bifrenatus (Cope)—bridled shiner (1)
Notropis cerasinus (Cope)—crescent shiner (3, 9, 14, 16)
Notropis coccogenis (Cope)—warpaint shiner (6, 9)
Notropis cornutus (Mitchill)—eastern common shiner (2, 3, 4, 9, 10, 14, 16, 18, 20)
Notropis galacturus (Cope)—whitetail shiner (3, 6, 9)
Notropis hudsonius (Clinton)—spottail shiner (2, 4, 19)
Notropis leuciodus (Cope)—Tennessee shiner (9)
Notropis matutinus (Cope)—pinewoods shiner (10)
Notropis photogenis (Cope)—silver shiner (3, 7, 9, 14)
Notropis procne (Cope)—swallowtail shiner (2, 4, 9, 14, 15, 17, 20)
Notropis rubellus (Agassiz)—rosyface shiner (2, 3, 4, 7, 9, 10, 14, 16)
Notropis rubricroceus (Cope)—saffron shiner (6, 9)
Notropis scabriceps (Cope)—New River shiner (3, 9, 14)
Notropis spectrunculus (Cope)—mirror shiner (6, 9)
Notropis spilopterus (Cope)—spotfin shiner (3, 7, 9, 14)
Notropis stramineus (Cope)—sand shiner (3)
Notropis umbratilis (Girard)—redfin shiner (3)
Notropis volucellus (Cope)—mimic shiner (3, 7, 9, 14)
Opsopoedus emiliae Hay—pugnose minnow (3, 9, 14)
Parexoglossum laurae Hubbs—tonguetied minnow (3, 7, 9, 14)
Phenacobius teretulus Cope—Kanawha minnow (3, 9)
Phenacobius uranops (Cope)—stargazing minnow (9)
Pimephales notatus Rafinesque—bluntnose minnow (2, 3, 4, 7, 9, 14, 16, 18, 20)
Pimephales promelas Rafinesque—fathead minnow (3, 23)
Rhinichthys atratulus (Hermann)—blacknose dace (2, 3, 4, 6, 7, 9, 10, 11, 13, 14, 15, 16, 18, 20)
Rhinichthys cataracte (Valenciennes)—longnose dace (2, 3, 4, 7, 9, 14, 15, 16, 17, 18)
Semotilus atromaculatus (Mitchill)—creek chub (2, 3, 4, 7, 9, 15, 16, 18, 20)
Semotilus corporalis (Mitchill)—fallfish (1, 2, 4, 9, 10, 14, 19, 20)

CATOSTOMIDAE

Catostomus commersoni (Lacepede)—white sucker (1, 2, 3, 4, 6, 7, 9, 10, 14, 15, 16, 19, 20)
Erimyzon oblongus (Mitchill)—creek chubsucker (1, 2, 4, 9, 10, 19)
Erimyzon sucetta (Lacepede)—lake chubsucker (4, 9, 15)
Hypentelium nigricans (LeSueur)—northern hogsucker (1, 2, 3, 4, 6, 7, 9, 11, 14, 15, 16, 18, 20)
Hypentelium roanokense Raney and Lochner—Roanoke hogsucker (9, 14, 16)
Moxostoma ariommum Robins and Raney—bigeye jumprock (9, 22)
Moxostoma breviceps (Cope)—shorthead redhorse (3, 9)
Moxostoma cervinum (Cope)—black jumprock (4, 9, 14, 16)
Moxostoma collapsum (Cope)—V-lip redhorse (22)
Moxostoma erythrurum (Rafinesque)—golden redhorse (3, 9, 14)
Moxostoma hamiltoni (Raney and Lochner)—rustyside sucker (16)
Moxostoma macrolepidotum (LeSueur)—northern redhorse (1, 4, 8)
Moxostoma papillosum (Cope)—suckermouth redhorse (9, 14, 16)
Moxostoma rhothocum (Thoburn)—torrent sucker (3, 4, 7, 9, 10, 11, 14, 16, 18, 20)

ARIIDAE

Galeichthys felis (Linnaeus)—sea catfish (1)

ICTALURIDAE

Ictalurus catus (Linnaeus)—white catfish (1, 2, 3, 4, 8)
Ictalurus melas (Rafinesque)—black bullhead (3)
Ictalurus natalis (LeSueur)—yellow bullhead (1, 2, 3, 4, 9, 10, 19)
Ictalurus nebulosus (LeSueur)—brown bullhead (1, 2, 3, 4, 9, 10, 19)
Ictalurus platycephalus (Girard)—flat bullhead (5)
Ictalurus punctatus (Rafinesque)—channel catfish (1, 2, 3, 4, 8, 9, 14, 15, 19)
Noturus flavus Rafinesque—stonecat (3, 23)
Noturus gilberti Jordan and Evermann—orangefin madtom (22)
Noturus gyrinus (Mitchill)—tadpole madtom (1, 4)
Noturus insignis (Richardson)—margined madtom (1, 3, 9, 10)
Pylodictis olivaris (Rafinesque)—flathead catfish (3)

ANGUILLIDAE

Anguilla rostrata (LeSueur)—American eel (1, 2, 3, 4, 8, 9, 10, 15, 19)

CONGRIDAE

Conger oceanicus (Mitchill)—conger eel (1)

SCOMBERESOCIDAE

Scomberesox saurus (Walbaum)—Atlantic saury (1)

BELONIDAE

Ablennes hians (Valenciennes)—flat needlefish (1)
Strongylura acus (Lacepede)—agujon (1)
Strongylura marina (Walbaum)—Atlantic needlefish (1, 5, 8)

HEMIRHAMPHIDAE

Hemiramphus brasiliensis (Linnaeus)—ballyhoo (1)
Hyporhamphus unifasciatus (Ranzani)—halfbeak (1)

EXOCOETIDAE

Cypselurus heterurus (Rafinesque)—Atlantic flyingfish (1)

CYPRINODONTIDAE

Cyprinodon variegatus Lacepede—sheephead minnow (1)
Fundulus catenatus (Storer)—northern studfish (9)
Fundulus confluentus Goode and Bean—marsh killifish (1)
Fundulus diaphanus (LeSueur)—banded killifish (1, 2, 4, 8, 9)
Fundulus heteroclitus (Linnaeus)—mummichog (1, 8)
Fundulus luciae (Baird)—spotfin killifish (1)
Fundulus majalis (Walbaum)—striped killifish (1, 8)
Lucania parva (Baird and Girard)—rainwater killifish (1)

POECILIIDAE

Gambusia affinis (Baird and Girard)—mosquitofish (1, 4, 9, 10, 15)

AMBLYOPSIDAE

Chologaster cornuta Agassiz—swampfish (4)

GADIDAE

Gadus morhua Linnaeus—Atlantic cod (1)
Merluccius bilinearis (Mitchill)—silver hake (1)
Microgadus tomcod (Walbaum)—Atlantic tomcod (1)
Pollachius virens (Linnaeus)—pollock (1)

Urophycis chuss (Walbaum)—squirrel hake (1)
Urophycis regius (Walbaum)—spotted hake (1)

GASTEROSTEIDAE

Apeltes quadracus (Mitchill)—fourspine stickleback (1, 4)
Gasterosteus aculeatus Linnaeus—threespine stickleback (1)

FISTULARIIDAE

Fistularia tabacaria Linnaeus—cornetfish (1)

SYNGNATHIDAE

Syngnathus floridae (Jordan and Gilbert)—dusky pipefish (1)
Syngnathus fuscus Storer—northern pipefish (1)
Syngnathus louisianae Gunther—chain pipefish (1)

APHREDODERIDAE

Aphredoderus sayanus (Gilliams)—pirateperch (4, 9, 10, 15, 17)

SERRANIDAE

Centropristes striatus (Linnaeus)—black seabass (1)
Mycteroperca microlepis (Goode and Bean)—gag (1)
Roccus americanus (Gmelin)—white perch (1, 3, 4, 8, 9)
Roccus chrysops (Rafinesque)—WHITE BASS (3)
Roccus saxatilis (Walbaum)— STRIPED BASS (1, 4, 8, 9)

LOBOTIDAE

Lobotes surinamensis (Bloch)—tripletail (1)

LUTJANIDAE

Lutjanus griseus (Linnaeus)—gray snapper (1)

PRIACANTHIDAE

Priacanthus arenatus (Cuvier)—bigeye (1)
Pristigenys alta (Gill)—short bigeye (1)

CENTRARCHIDAE

Acantharcus pomotis (Baird)—MUD SUNFISH (4, 9)
Ambloplites cavifrons Cope—ROANOKE BASS (4)
Ambloplites rupestris (Rafinesque)—ROCK BASS (2, 3, 4, 6, 7, 9, 14, 16)
Centrarchus macropterus (Lacepede)—FLIER (4, 9, 10)
Chaenobryttus gulosus (Cuvier)—WARMOUTH (1, 2, 3, 4, 9, 10, 19)
Enneacanthus gloriosus (Holbrook)—BLUESPOTTED SUNFISH (1, 4, 9, 10)
Enneacanthus obesus (Girard)—BANDED SUNFISH (1, 4)
Lepomis auritus (Linnaeus)—REDBREAST SUNFISH (1, 2, 3, 4, 6, 7, 8, 9, 10, 14, 15, 16, 19)
Lepomis cyanellus Rafinesque—GREEN SUNFISH (3, 7, 9, 20)
Lepomis gibbosus (Linnaeus)—PUMPKINSEED (1, 2, 3, 4, 8, 9, 10, 15, 17, 19)
Lepomis macrochirus Rafinesque BLUEGILL (1, 2, 3, 4, 9, 10, 14, 15, 17, 19)
Lepomis megalotis (Rafinesque)—LONGEAR SUNFISH (3, 7)
Lepomis microlophus (Gunther)—REDEAR SUNFISH (5)
Micropterus dolomieui Lacepede—SMALLMOUTH BASS (1, 2, 3, 4, 7, 9, 16, 19, 20)
Micropterus punctulatus (Rafinesque)—SPOTTED BASS (3)
Micropterus salmoides (Lacepede)—LARGEMOUTH BASS (1, 2, 3, 4, 8, 9, 10, 19)
Pomoxis annularis Rafinesque —WHITE CRAPPIE (3, 9, 19)
Pomoxis nigromaculatus (LeSueur)—BLACK CRAPPIE (1, 2, 3, 4, 9, 10, 15, 19)

PERCIDAE

Etheostoma blennioides Rafinesque—greenside darter (3, 7, 9, 14, 18)
Etheostoma caeruleum Storer—rainbow darter (3, 18)
Etheostoma flabellare Rafinesque—fantail darter (2, 3, 4, 7, 9, 11, 12, 13, 14, 16, 18, 20)
Etheostoma fusiforme (Girard)—swamp darter (4, 9, 10, 17)
Etheostoma kanawhae (Raney)—Kanawha darter (3, 9)
Etheostoma longimanum Jordan—longfin darter (4, 9, 14, 18, 20)
Etheostoma maculatum Kirtland—spotted darter (3, 9)
Etheostoma nigrum Rafinesque—Johnny darter (2, 4, 8, 9, 10, 12, 13, 14, 15, 16, 17)
Etheostoma osburni (Hubbs and Trautman)—finescale saddled darter (3, 7)
Etheostoma podostemone Jordan and Jenkins—riverweed darter (9, 12, 13, 14, 16, 18)
Etheostoma rufilineatum (Cope)—redline darter (9)
Etheostoma simoterum (Cope)—Tennessee snubnose darter (6, 9, 18)
Etheostoma variatum Kirtland—variegate darter (3, 9, 18)
Etheostoma vitreum (Cope)—glassy darter (4, 14, 15)
Etheostoma zonale (Cope)—banded darter (3, 9, 18)
Perca flavescens (Mitchill)—yellow perch (1, 3, 8, 9)
Percina caprodes (Rafinesque)—logperch (3, 9)
Percina copelandi (Jordan)—channel darter (3)
Percina crassa (Jordan and Brayton)—piedmont darter (9, 14, 16, 17, 18)
Percina maculata (Girard)—blackside darter (3, 9, 14)
Percina notogramma (Raney and Hubbs)—stripeback darter (1, 2, 4, 9, 10, 14)
Percina oxyrhyncha (Hubbs and Raney)—sharpnose darter (3, 7, 9)
Hadropterus peltata (Stauffer)—shield darter (4, 9, 14, 17)
Percina rex (Jordan and Evermann)—Roanoke logperch (9, 14, 18)
Stizostedion canadense (Smith)—SAUGER (3, 5)
Stizostedion vitreum (Mitchill)—WALLEYE (3)

POMATOMIDAE

Pomatomus saltatrix (Linnaeus)—bluefish (1)

RACHYCENTRIDAE

Rachycentron canadum (Linnaeus)—cobia (1)

CARANGIDAE

Alectis crinitus (Mitchill)—African pompano (1)
Caranx hippos (Linnaeus)—crevalle jack (1)
Caranx latus Agassiz—horse-eye jack (1)
Chloroscombrus chrysurus (Linnaeus)—bumper (1)
Oligoplites saurus (Bloch and Schneider)—leatherjacket (1)
Selar crumenophthalmus (Bloch)—bigeye scad (1)
Selene vomer (Linnaeus)—lookdown (1)
Seriola falcata Valenciennes—almaco jack (1)
Seriola fasciata (Bloch)—lesser amberjack (1)
Seriola zonata (Mitchill)—banded rudderfish (1)
Trachinotus carolinus (Linnaeus)—pompano (1)
Trachinotus falcatus (Linnaeus)—permit (1)
Trachinotus glaucus (Bloch)—palometa (1)
Trachurus lathami Nichols—rough scad (1)
Vomer setapinnis (Mitchill)—Atlantic moonfish (1)

CORYPHAENIDAE

Coryphaena hippurus Linnaeus—dolphin (1)

GERRIDAE

Eucinostomus argenteus Baird and Girard—spotfin mojarra (1)
Eucinostomus gula (Quoy and Gaimard)—silver jenny (1)

POMADASIDAE

Bathystoma aurolineatum (Cuvier)—tomtate (1)
Haemulon plumieri (Lacepede)—white grunt (1)
Orthopristis chrysopterus (Linnaeus)—pigfish (1)

SCIAENIDAE

Bairdiella chrysura (Lacepede)—silver perch (1, 8)
Larimus fasciatus Holbrook—banded drum (1)
Cynoscion nebulosus (Cuvier)—spotted seatrout (1)
Cynoscion nothus (Holbrook)—silver seatrout (1)
Cynoscion regalis (Bloch and Schneider)—weakfish (1)
Leiostomus xanthurus Lacepede—spot (1, 4, 8)
Menticirrhus americanus (Linnaeus)—southern kingfish (1)
Menticirrhus littoralis (Holbrook)—Gulf kingfish (1)
Menticirrhus saxatilis (Bloch and Schneider)—northern kingfish (1)
Micropogon undulatus (Linnaeus)—Atlantic croaker (1, 4, 8)

Pogonias cromis (Linnaeus)—black drum (1)
Sciaenops ocellata (Linnaeus)—red drum (1)
Stellifer lanceolatus (Holbrook)—star drum (1)
Umbrina coroides (Cuvier)—sand drum (1)

SPARIDAE

Archosargus probatocephalus (Walbaum)—sheepshead (1)
Diplodus holbrooki (Bean)—spottail pinfish (1)
Lagodon rhomboides (Linnaeus)—pinfish (1)
Stenotomus chrysops (Linnaeus)—scup (1)

KYPHOSIDAE

Kyphosus sectatrix (Linnaeus)—Bermuda chub (1)

EPHIPPIDAE

Chaetodipterus faber (Broussonet)—Atlantic spadefish (1)

CHAETODONTIDAE

Chaetodon ocellatus Bloch—spotfin butterfly fish (1)

LABRIDAE

Tautoga onitis (Linnaeus)—tautog (1)
Tautoglabrus adspersus (Walbaum)—cunner (1)

SCARIDAE

Scarus coeruleus (Bloch)—blue parrotfish (1)

TRICHIURIDAE

Trichiurus lepturus Linnaeus—Atlantic cutlass fish (1)

SCOMBRIDAE

Euthynnus alletteratus (Rafinesque)—little tuna (1)
Sarda sarda (Bloch)—Atlantic bonito (1)
Scomber colias Gmelin—chub mackerel (1)
Scomber scombrus Linnaeus—Atlantic mackerel (1)
Scomberomorus cavalla (Cuvier)—king mackerel (1)
Scomberomorus maculatus (Mitchill)—Spanish mackerel (1)
Scomberomorus regalis (Bloch)—cero mackerel (1)
Thunnus thynnus (Linnaeus)—bluefin tuna (1)

XIPHIIDAE

Xiphias gladius Linnaeus—swordfish (1)

GOBIIDAE

Evorthodus lyricus (Girard)—lyre goby (1)
Gobionellus boleosoma (Jordan and Gilbert)—darter goby (1)
Gobiosoma bosci (Lacepede)—naked goby (1)
Gobiosoma ginsburgi Hildebrand and Schroeder—seaboard goby (1)
Microgobius thalassinus (Jordan and Gilbert)—green goby (1)

TRIGLIDAE

Prionotus carolinus (Linnaeus)—northern searobin (1)
Prionotus evolans (Linnaeus)—striped searobin (1)
Prionotus scitulus Jordan and Gilbert—leopard searobin (1)
Prionotus tribulus Cuvier—bighead searobin (1)

COTTIDAE

Cottus bairdi Girard—mottled sculpin (2, 3, 4, 7, 9, 14, 15, 16, 20)
Cottus carolinae (Gill)—banded sculpin (3, 6, 7, 9, 14, 15)
Cottus cognatus Richardson—slimy sculpin (4, 16, 18)
Hemitripterus americanus (Gmelin)—sea raven (1)

CYCLOPTERIDAE

Cyclopterus lumpus Linnaeus—lumpfish (1)

DACTYLOPTERIDAE

Dactylopterus volitans (Linnaeus)—flying gurnard (1)

URANOSCOPIDAE

Astroscopus guttatus Abbott—northern stargazer (1)

BLENNIIDAE

Blennius marmoreus Poey—seaweed blenny (1)
Chasmodes bosquianus (Lacepede)—striped blenny (1)
Hypsoblennius hentzi (LeSueur)—feather blenny (1)

OPHIDIIDAE

Rissola marginata (DeKay)—striped cusk-eel (1)

STROMATEIDAE

Peprilus alepidotus (Linnaeus)—southern harvestfish (1)
Poronotus triacanthus (Peck)—butterfish (1)

SPHYRAENIDAE

Sphyraena borealis DeKay—northern sennet (1)
Sphyraena guachancho Cuvier—quaguanche (1)

MUGILIDAE

Mugil cephalus Linnaeus—striped mullet (1)
Mugil curema Valenciennes—white mullet (1)

ATHERINIDAE

Membras martinica (Valenciennes)—rough silverside (1)
Menidia beryllina (Cope)—tidewater silverside (1, 4, 8)
Menidia menidia (Linnaeus)—Atlantic silverside (1, 8)

POLYNEMIDAE

Polydactylus octonemus (Girard)—Atlantic threadfin (1)

BOTHIDAE

Etropus crossotus Jordan and Gilbert—fringed flounder (1)
Etropus microstomus (Gill)—smallmouth flounder (1)
Citharichthys macrops Dresel—spotted whiff (1)
Paralichthys dentatus (Linnaeus)—summer flounder (1, 8)
Scophthalmus aquosus (Mitchill)—windowpane (1)

PLEURONECTIDAE

Hippoglossus hippoglossus (Linnaeus)—Atlantic halibut (1)
Limanda ferruginea (Storer)—yellowtail flounder (1)
Pseudopleuronectes americanus (Walbaum)—winter flounder (1)

SOLEIDAE

Trinectes maculatus (Bloch and Schneider)—hogchoker (1, 8)

CYNOGLOSSIDAE

Symphurus plagiusa (Linnaeus)—backcheek tonguefish (1)

ECHENEIDAE

Echeneis naucrates Linnaeus—sharksucker (1)
Remora australis (Bennett)—whalesucker (1)

BALISTIDAE

Alutera schoepfi (Walbaum)—orange filefish (1)
Monocanthus hispidus (Linnaeus)—planehead filefish (1)

OSTRACIIDAE

Lactephrys trigonus (Linnaeus)—trunkfish (1)

TETRAODONTIDAE

Lagocephalus laevigatus (Linnaeus)—smooth puffer (1)
Sphaeroides maculatus (Bloch and Schneider)—northern puffer (1)
Sphaeroides testudineus (Linnaeus)—checkered puffer (1)

DIODONTIDAE

Chilomycterus schoepfi (Walbaum)—striped burrfish (1)
Diodon hystrix Linnaeus—porcupinefish (1)

BATRACHOIDIDAE

Opsanus tau (Linnaeus)—oyster toadfish (1, 8)

LOPHIIDAE

Lophius americanus Valenciennes—goosefish (1)

ANTENNARIIDAE

Histrio histrio (Linnaeus)—sargassum fish (1)

OGCOCEPHALIDAE

Ogcocephalus vespertilio Linnaeus—longnose batfish (1)

George Washington, Fox Hunter

By EDDIE W. WILSON

Virginia State Chamber of Commerce Photos

GEORGE WASHINGTON'S diaries written at Mount Vernon during the period from 1748 to 1788 show that fox hunting on horseback was his favorite sport.

Under the repeated heading "Where & how my time is Spent," he not only enumerates the occasions—over a hundred—when he rode to the hounds, but he gives in many instances the names of his hunting companions, the names of his hunting dogs, the purchase and exchange of dogs, and the breeding and care of these creatures.

The following entries in his journals are typical of his fox hunting experiences:

Went a fox hunting in the Neck [one of his several farms]. *Started nothing.*

Started a Fox and run him 4 hours, took the Hounds off at Night. Catchd nothing that we knew of.

Catchd a Fox.

Catchd 2 Foxes.

Catchd a Fox we suppose, but being dark could not find it.

Went a fox hunting and finding a Deer the Dogs run it to the water, but we never see it.

Catchd a Rakoon but never found a Fox.

Started a fox and lost it.

Went a fox hunting and took a fox alive after running him to a Tree. Bro't him home.

Went Fox hunting in the Neck. Started and was run out of hearg. of the Dogs, owing to the Wind. Whether they catchd or not is not known.

Hunting again and catchd a fox with a bobd Tail and cut ears, after 7 hours chase in wch. most of the Dogs were worsted.

On one occasion, he reports that the dogs were unmanageable:

Went to the Woods back of Muddy hole [another one of his farms] *with the hounds. Unkennelled 2 foxes and dragged others but caught none—the dogs running wildly and being under no command.*

At another time when hunting back of Muddy Hole,

We found a fox near Colo. Mason's [Colonel George Mason of Gunston Hall] *Plantation on little Hunting Creek (West fork), having followed on his Drag more than a Mile; and run him with Eight Dogs (the other 4 getting, as was supposed, after a second Fox) close and well for an hour. When the Dogs came to a fault, and to cold Hunting until 20 Minutes after 12, when being joined by the missing Dogs they put him up afresh and in about 50 minutes killed up in an open field of Colo. Mason's, every rider and every Dog present at the Death.*

Among Washington's hunting companions were his kinsman Lund Washington (Lund's and George's great-grandfathers were brothers); Colonel George William Fairfax of Belvoir Plantation, lifelong friend of George Washington with whom he made extensive surveys of the Virginia wilderness; Thomas Fairfax, sixth Lord Fairfax, "gentleman farmer," who is said to have taught Washington the fox hunting sport; Reverend Bryan Fairfax, eighth Lord Fairfax, brother of George William Fairfax, extensive land owner, and one of the organizers of the Episcopal Church in Virginia; Colonel Burwell Bassett of Eltham Plantation on the Pamunkey River; Thomas Triplett who served in Washington's regiment in the French and Indian War, also a pew-owner in Pohick Church,

Fox hunting, George Washington's favorite sport, remains popular with present-day Virginians.

Washington's Mount Vernon journals reveal that duck hunting may have come next to fox hunting in his esteem.

Fairfax Parish, in which Washington was a vestryman; Harrison Manley and Captain Daniel McCarty, also pew owners at Pohick Church; Alexander Henderson, Colchester merchant and also one of the Commissioners of Virginia; and John and Philip Alexander on whose lands part of the town of Alexandria was laid out.

The names of Washington's many dogs came from various sources. From Roman mythology came the names of the gods *Jupiter* and *Vulcan* and the goddess *Venus*. There were also *Music* and *Singer*. Such plebian names as *Mopsey, Pilot, Truelove, Forrester* and *Tipsey* associated with aristocrats named *Countess* and *Lady*.

There were buying and lending of dogs.

On December 3, 1785, Washington states that he "Brot. 2 Hounds frm. Colo. McCarty." Colonel Dennis McCarty was owner of the Cedar Grove Plantation in Prince William County.

On November 29, 1785, he was loaned two dogs by George Mason, Jr., of Gunston Hall.

The breeding of his dogs either took place at Mount Vernon or they were sent to neighboring plantations for this purpose. The resulting litter might be small or large. For instance the hound Lady once bore "Four Puppys, that is dogs and a bitch distinguished by the following names, viz. that with the most black spots Vulcan, the other black spotted Dog Searcher, the Red spotted Dog Rover, and the red spotted bitch Sweetlips." Far surpassing this litter in number was the one produced by another one of his hounds sent to him from France. She "brought forth 15 puppies this day; 7 of which (the rest being as many as I thought she could rear) I had drowned."

When mange was discovered among his dogs he "Anointed all my Hounds (as well as Puppies) which appeard to have the Mange with Hogs Lard & Brimstone."

Duck hunting, perhaps, came next to fox hunting in Washington's estimation. From the Mount Vernon journals come such entries as:

Went a ducking between breakfast and dinner and killd 2 Mallards and 5 bald pates.

Went a ducking in the forenoon—otherwise at home all day.

Ducking till dinner.

Went a Gunning up the Creek. Killd 2 Ducks.

Went a ducking, but got nothing, the Creeks and Rivers being froze.

. . . in the afternoon went up the Ck. after Blew Wings [blue wing teal]. *Killd 7 or 8.*

Hunting for either fox or duck was a manly sport in George Washington's day!

Catfish Lore

Many fishermen will argue, with considerable justification, that there is no better eating fish than a catfish or a bullhead. Many people are inclined to agree because there is a scarcity of bones in these fish. Not all members of the catfish family are used for food, however. In fact, there are some strange characters belonging to this family.

First of all, let us review the characteristics that place fish in the catfish group. They will have barbels (often called "feelers" by boys); they have spines in two of their fins; like trout, they have an adipose fin (the fatty little fin on top, just ahead of the tail); and they all have a naked skin.

Taxonomists have segregated the North American Catfishes into six major groups containing at least 23 different species. From a food and fishing standpoint, perhaps the best known of the six categories is the so-called channel catfish and bullhead group. It includes nine different species, among which the so-called blue catfish may attain a maximum weight of 150 pounds and is North America's largest catfish. Another large one, the flathead catfish, placed by taxonomists in a group by itself, may sometimes reach a maximum weight of almost a hundred pounds. The stonecat makes up a third category. Then there is a fairly large group of small catfishes called madtoms, the largest of which seldom grows longer than five inches.

The strange characters belong to the remaining two groups. One contains a species called blindcat, and the other contains a species called toothless blindcat. Of course, they are found only in Texas and underground at that! They were discovered in artesian wells around San Antonio.

If you want to study a fish that is "a little different," pick on a species of the catfish family. It should keep you busy for a lifetime and you could make a real contribution to man's knowledge of living creatures.

Game Law Men Confer on Baiting Regulation

Officials of the U. S. Fish and Wildlife Service and the Virginia Commission of Game and Inland Fisheries met at the Commission's Richmond office August 2 to discuss the interpretation of federal baiting regulations pertaining to the taking of doves and rails. A recent change in the baiting regulations, which consists solely of adding the words "planting or" immediately preceding the word "harvesting" in the section which outlines permitted hunting methods, was described. Under this change, dove hunting will be permitted over freshly seeded or planted fields.

Virginia's 1960-1961 Hunting Seasons and Bag Limits

RABBIT (Bag limit 6 a day, 75 a season)
QUAIL (Bag limit 8 a day, 125 a season)
GROUSE (Bag limit 3 a day, 15 a season)
East of Blue Ridge ..... November 21-January 31
West of Blue Ridge ..... November 21-January 14
TURKEY (Bag limit 1 a day, 2 a season, either sex)
Statewide, where permitted ..... November 21-January 14*
*Pittsylvania County (male turkeys only) ..... November 21-January 31
(Counties closed to turkey hunting: Bland, Buchanan, Carroll, Charles City, Clarke, Craig, Dickenson, Floyd, Franklin, Giles, Gloucester, Grayson, Greene, Henry, Lancaster, Lee, Loudoun, Madison, Mathews, Middlesex, Montgomery, Norfolk, Northumberland, Page, Patrick, Pulaski, Rappahannock, Richmond, Roanoke, Russell, Scott, Smyth, Tazewell, Warren, Washington, Westmoreland, Wise and Wythe, and also the portions of Rockingham and Shenandoah lying between Routes 11 and 340. Turkey hunting is also prohibited on the Gathright Wildlife Management Area in Bath and Alleghany counties and on the Big Levels Wildlife Management Area in Augusta County.)
RACCOON
East of Blue Ridge (no bag limit) ..... October 1-January 31*
*Essex County ..... continuous open season
West of Blue Ridge (See bag limits below) ..... October 15-January 31
(Bag limit 4 a day, no season limit, in Augusta, Clarke, Frederick, Highland, Page, Rockingham, Shenandoah and Warren counties. Bag limit 2 a day, no season limit in Alleghany, Bath, Bland, Botetourt, Buchanan, Carroll, Craig, Dickenson, Floyd, Giles, Grayson, Lee, Montgomery, Pulaski, Roanoke, Rockbridge, Russell, Scott, Smyth, Tazewell, Washington, Wise and Wythe counties.) (Bag limit 2 a day, 12 a season on national forests.)
OPOSSUM (No bag limit)
Statewide ..... October 15-January 31
MINK (No bag limit)
Statewide ..... December 15-January 31
BEAR (Bag limit 1 a season over 75 pounds live weight)
Statewide (exceptions below) ..... November 21-January 5
Dismal Swamp (Princess Anne, Norfolk and that portion of Nansemond County lying east of a line as follows: beginning at a point on Route No. 10 where it intersects the Isle of Wight County line, thence along this highway to its intersection with the corporate limits of Suffolk, thence through Suffolk to its intersection with Route No. 642 [White Marsh Road] and thence along this highway in a southwest direction to Route No. 604 [The Desert Road], and thence south along this highway to the North Carolina line) ..... October 1-November 30
Isle of Wight and in that portion of Nansemond County to the west of the line established in the preceding paragraph ..... November 10-January 5
Bland, Giles, Grayson, Montgomery, Pulaski, Smyth, Tazewell, Washington and Wythe counties (use of dogs prohibited during deer season) November 2-January 5
ELK (Bag limit 1 antlered bull a season)
Bedford, Bland, Botetourt counties and Giles County west of New River (use of dogs prohibited) ..... November 21-23
DEER — ARCHERY SEASON
In counties having a general open deer season, 1 deer of either sex may be taken with bow and arrow only (use of dogs prohibited) ..... October 15-November 1
DEER, SQUIRREL AND FOX
NUMBERS refer to season, LETTERS to bag limit (see codes below). Example: Deer in Spotsylvania County—1-F means season 1 (November 21-January 5) and bag F (2 a season, one of which may be a doe.)
SEASON CODE (dates inclusive):

1—November 21-January 5
2—November 21-26
3—November 10-January 5
4—October 1-November 30
5—November 21-23
6—November 21-January 31
7—October 1-15
8—September 1-15
9—September 15-30 and November 21-January 1
10—February 1-September 30
11—November 20-January 20
12—November 21-January 14
13—September 15-30
14—September 1-30
15—September 15-October 14 and November 21-January 1
16—Continuous open season
17—October 1-January 31
18—Continuous open season except daytime April 1-September 1
19—September 1-March 31
20—October 15-January 31
21—November 1-February 28 regardless of snow
22—October 1-March 31 regardless of snow
23—October 1-February 28

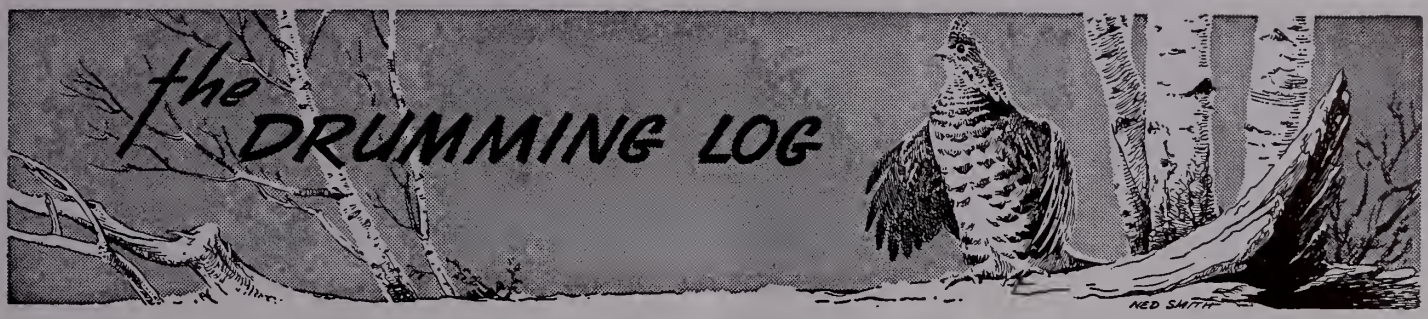
DEER BAG LIMIT CODE (Limit 1 a day. Bucks only may be taken unless otherwise specified. Where shooting of bucks only is permitted, only those deer which have antlers visible above the hair may be taken.):

A—1 a season, bucks only
B—2 a season, bucks only
C—1 a season, either sex during first three days
D—2 a season, one of which may be a doe during first three days
E—1 a season, either sex
F—2 a season, 1 of which may be a doe

"EAST OF BLUE RIDGE" COUNTIES	DEER Bag: see letter code	SQUIRREL Bag: 6 a day, 75 o seoson	FOX No bag limits With dogs	FOX No bag limits With gun
Accomack	1-B	7,6	16	17
Parramore Is.	1-E			
Albemarle	1-B	B,6	16	Closed
Amelio	1-B	6	1B	Clased
Amherst				
west of U. S. 29	2-A	7,6	16	Closed
east of U. S. 29	1-B			
Nationol forest lands		12		12

"EAST OF BLUE RIDGE" COUNTIES	DEER Bog: see letter code	SQUIRREL Bag: 6 o doy, 75 a season	FOX No bag limits With dogs	FOX No bag limits With gun
Appomattox	1-B	6	16	Closed
Bedford	Closed	7,6	16	17
Brunswick	1-B	6	16	17
Buckingham	1-B	6	16	17
Campbell	2-A	7,6	16	17
Caroline	1-F	6	16	17
Chorles City	1-B	6	16	17
Charlotte	1-B	6	16	Closed
Chesterfield	1-B	6	16	Greys 6 Reds 16
Culpeper	1-F	7,6	16	Closed
Cumberland	1-B	6	16	17
Dinwiddie	1-B	6	16	17
Darville District				Closed
Essex	1-F	6	16	17
Fairfax	1-E	7,6	19	17
Fauquier	1-E	7,6	19	Closed
Fluvanno	1-B	6	16	17
Fronklin	2-A	15	16	6
Gloucester	1-F	11	16	17
Goochland	1-F	6	16	17
Greene	1-B	8,6	16	17
Greensville	1-B	8,6	16	17
Halifax	1-F	B,6	16	Clased
Game Preserves				17
Hampton City	1-F	6	16	17
Hanover	1-F	6	16	17
Henrico	1-F	6	16	17
Henry	Clased	15	16	17
Isle of Wight	3-B	7,6	16	17
James City	1-B	6	16	17
King George	1-F	6	16	6
King and Queen	1-F	11	16	Greys 17 Reds 16
King William	1-F	6	16	17
Lancaster	1-F	6	16	17
Loudaun	1-E	7,6	19	Closed
Louisa	1-F	6	16	Clased
Lunenburg	1-B	6	16	17
Madisan	1-B	B,6	16	17
Mathews	1-F	11	16	17
Mecklenburg	1-B	6	16	17
Middlesex	1-F	11	16	17
Nansemand	4-B* 3-B†	7,6	16	17
Nelson				
east of Rt. 151	1-B	6	16	17
west of Rt. 151	2-A			
New Kent	1-B	6	16	17
Newport News	1-F	6	17	17
Narfolk	4-D	7,6	16	17
Northompton	Closed	7,6	16	17
Northumberland	1-F	6	16	17
Nottoway	1-B	6	16	Greys closed Reds 17
Orange	1-E	6	16	17
Patrick	2-A	15	16	6
Pittsylvonia	2-A	6	16	6
Powhotan	1-B	6	16	17
Prince Edward	1-B	6	16	6
Prince George	1-D	11	16	17
Princess Anne	4-D	6	16	17
Prince William	1-E	6	16	17
Rappahannock	1-E	B,6	19	Closed
Richmond	1-F	6	16	16
Southampton	1-D	B,6	16	17
Spotsylvania	1-F	6	16	17
Staffard	1-F	6	16	10
Surry	1-B	6	16	17
Sussex	1-D	6	16	17
Westmareland	1-F	6	16	17
York	1-F	6	16	17
"WEST OF BLUE RIDGE" COUNTIES				
Alleghany	2-C	7,12	16	12
Augusta	2-C	12	16	12
Bath	2-C	12	16	12
Bland				
east of U. S. 21 & 52	S-A	13,12	16	12
west af U. S. 21 & 52	2-A			
Botetaurt	2-C	7,12	16	12
Buchanan	Closed	14,1	16	20
Carroll	2-A	15	16	12
Clarke	2-C	7,12	19‡	Closed
Craig	2-C	7,12	16	12
Dickenson	2-A	13,12	16	12
Floyd	2-A	15	16	12
Frederick	2-C	7,12	16	21
Giles				
west af New River	S-A	15	16	12
east af New River	2-C			
Grayson	2-C	9	16	6
Highland	2-C	12	16	12
Lee	2-C	13,12	16	12
Mantgamery	Closed	13,12	16	12
Page	2-C	7,12	16	12
Pulaski	2-A	13,12	16	12
Roanoke	2-C	7,12	16	12
Rackbridge	2-C	12	16	16
Rockingham	2-C	7,12	16	22
Russell	2-C	13,12	16	12
Scott	2-C	13,12	16	23
Shenandoah	2-C	7,12	16	12
Smyth	2-C	13,12	16	12
Tazewell	2-A	13,12	16	6
Warren	2-C	7,12	16	12
Washington	2-C	13,12	16	23
Wise	2-C	13,12	16	12
Wythe	2-C	13,12	16	23

* and †: see game law summary ‡ Closed during deer season.



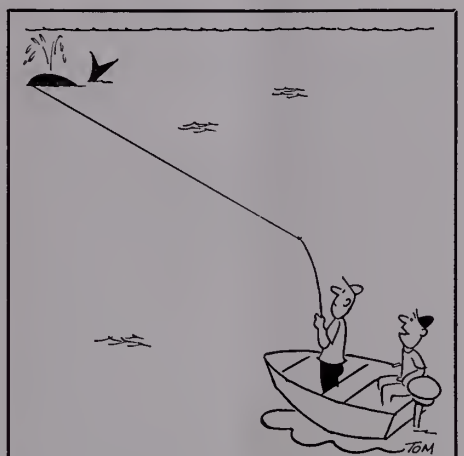
Multiple Use Bill Important National Forest Legislation

"The act signed by President Eisenhower directing that the national forests be administered for multiple use and sustained yield is one of the most important pieces of national forest legislation in the last 50 years," Acting Secretary of Agriculture True D. Morse said June 17. The President signed the act June 12, before taking off for the Far East.

"For the first time multiple use and sustained yield have been used and defined in a law, though the Forest Service has been practicing both for years," the Acting Secretary pointed out.

"It is gratifying to know that all types of forest users—recreationists, water users, timbermen, and stockmen—supported this important legislation. This law, P.L. 86-517, along with the 1897 forest administration act, will be the fundamental charter for national forest management and development."

The new law provides that the national forests shall be administered for outdoor recreation, range, timber, water, wildlife and fish but gives no statutory priority to one resource over another.



"If it's what I think it is, you've hooked something worthwhile!"

Pollution Grants Are Continued At $45 Million

Federal water pollution control grants to municipalities will continue at the same $45 million level during the 1961 fiscal year as a result of recent action by the Senate, the National Wildlife Federation reports.

The Senate on June 17 passed H. R. 11390 and joined the House in granting $45 million for the Federal waste treatment construction grants program of the U. S. Public Health Service. The House had passed the bill on March 28, restoring an Administration-proposed $25 million cut in the grants program.

Also continued at the same level was $2.7 million for program grants to states and $300,000 for program grants to interstate pollution control agencies. The grants help the state and interstate agencies finance their own pollution control programs.

Even though other portions of the $4,484,088,931 appropriation for the Departments of Labor and Health, Education, and Welfare were to be considered in a Senate-House conference committee, the grants programs were identical in both bodies and would be sent on to the President without change.

Great Plains Areas Named National Grasslands

Nearly 4 million acres of public lands, mostly in the Great Plains States, were renamed National Grasslands on June 20 in another major conservation move to stabilize their management and assure long-term wise use of their natural resources. Acting Secretary of Agriculture True D. Morse signed the administrative order redesignating these former land utilization projects.

It was emphasized by Assistant Secretary Ervin L. Peterson, who has administrative responsibility for managing the USDA's public lands, that this action is part of the Department's program to promote the economic stability of Great Plains agriculture.

These lands which were originally unsuited for cropping developed into dust bowls. Restoring these lands to grass and encouraging other conservation management practices on all lands will contribute to the stability of agriculture in the important Great Plains Region. Involved in the Department's present action are 3.8 million acres in 11 Great Plains and Western States which will be administered by USDA's Forest Service under multiple-use and sustained yield management plans.

State Rifle Teams Awarded Medals

For the second consecutive year the Virginia State Rifle & Revolver Association has awarded five silver medals to a College "All State" rifle team and five silver medals to a Scholastic "All State" rifle team. Announcement of the honorary All State Rifle Teams for 1960 was made by the association's Vice President of Junior Activities, Doctor Richard L. Russell of Newport News.

COLLEGE ALL STATE RIFLE TEAM

Name	*Home*	*School*	*Average*
Frank O. Smith	Arlington	V. P. I.	95.555
William A. Hanger	Staunton	V. P. I.	94.222
Robert J. Booker	Clarence Center, N.Y.	V. P. I.	93.888
Richard B. Miller	Washington, D. C.	V. P. I.	93.750
Robert E. Watkins	Richmond	U. of Richmond	93.660

SCHOLASTIC ALL STATE RIFLE TEAM

Leigh P. Beadle	Arlington	Washington-Lee H.S.	95.388
Thomas K. Verzi	Arlington	Washington-Lee H.S.	95.333
Fletcher F. Drake	Norfolk	Fishburne Mil. School	95.187
John L. Hopwood	Arlington	Washington-Lee H.S.	94.666
William A. Pitt	Santiago, DeCuba	Fishburne Mil. School	93.812

Evelyn P. Rueger Retires After 40 Years' Service

Mrs. Evelyn P. Rueger, veteran of almost 40 years with the Virginia Commission of Game and Inland Fisheries, retired on August 3.

Mrs. Rueger began work for the Commission as stenographer on November 1, 1920, at that time being Miss Evelyn May Paris. She was named assistant to the executive director on February 14, 1948, and assistant executive director on August 26, 1949, under former executive director I. T. Quinn. Mrs. Rueger's duties included the preparation and advertisement of all proposals and regulations, preparation for printing of the "Commission Regulations" booklet and serving as office manager, personnel administrator and secretary to the Commission.

Fawn Nursery In Full Swing

That cute little fawn standing all alone in the middle of that great big forest is NOT lost! Most people just can't believe that the little bundle of white spots is not lost and doomed to starvation.

When danger approaches a doe and her fawn, the doe has little choice but to hide her baby and run herself if the fawn is too small to run with her. A great majority of the "lost" fawns brought in each year are not lost at all, just hidden. When danger has passed, the doe will return and life will go on as before if the fawn has not been carted off by some well meaning humans.

This scene from last year's big game contest at Newport News should serve as a reminder that entries for the eastern contest must be in the hands of the judges (contact E. N. Vandenbree, 41 Sinton Rd., Newport News) by 6 p.m. Oct. 14 and entries for the western contest must be before the judges by 6 p.m. Oct. 29 (contact Ray Carr, 394 N. Liberty St., Harrisonburg).

Two's company and three's a crowd at the Poor Valley Fawn Nursery.

Commission Photos by Harrison

Mrs. Ramon Sparks is shown feeding the first three boarders at the Poor Valley nursery.

Because of this annual problem, the Commission of Game and Inland Fisheries decided to establish a fawn nursery in the southwestern corner of the state in order to eliminate the long trip to the Cumberland game farm in eastern Virginia. The nursery in Poor Valley was finished on September 1, 1958, and within a few weeks it had its first three occupants. These were raised and released. The following year, four more fawns were brought to the Poor Valley nursery. This year, by July 1, the nursery had four more orphans.

Raising these fawns is costly, and more education of the public is needed to encourage them to leave fawns alone unless there is definite evidence that the animal has been orphaned.

Do You Believe . . .

Food comes from the corner grocery store . . .
And not from the farmer's labor—and his soil?
Water, clear and cool, comes from a faucet . . .
And not from the rain-soaked ground of a distant wooded hillside?
Heat comes from the basement furnace . . .
And not from the coal and oil which the land yields so abundantly?
Wood comes from the lumberyard . . .
And not from the forest tree with its thirsty roots deep in Mother Earth?
Fish come from the market—or the fisherman's creel . . .
And not from the lake or stream with its array of unseen life and its storehouse of minerals?
Game comes to us simply by "shooting it" . . .
And not from field and wood where life-giving plants are ever nourished by soil and by water?
Conservation means only *saving* and is for a select few . . .
And not the *wise use*—by each of us —of Earth's precious gifts?
These blessings, so lavishly strewn upon man, came by mere "chance" . . .
And are not the tangible expressions of a loving God "who giveth us all things richly to enjoy"?

—George H. Harvey
Wildlife Education Specialist

Commission Photo by Harrison

Assistant Information Officer George Harrison, Game Biologist Charles Peery, Game Warden Supervisor Ben Bird and Supervising Game Biologist John McLaughlin met with P. B. Douglas, District Agriculture Agent (center) at the Southwest Virginia 4-H Center at Abingdon in July to discuss the camp's wildlife program.

Blue Jay Likes Ice Cream

Commission Photo by Kesteloo

Sid and Betsy Calvo with friend.

Like kids the world over, baby blue jays like ice cream too. Sid and Betsy Calvo of 7526 Tanglewood Road, Richmond, found a young blue jay near their home after it had left the nest. The blue jay adopted the Calvo children and since then they have been feeding him. The young jay prefers hamburger and ice cream to the beetles and worms that most other birds eat. The jay also enjoys riding on the shoulders of the youngsters. Occasionally, the blue jay will fly to a nearby tree and act like a bird, but most of the time he prefers to act like a human.

Bird Box Winners Announced

Buckingham County Game Wardens Malcolm Booker and Charles Spencer have announced the names of the winners of the county-wide bird box contest. Winners were judged on the numbers of boxes they built and erected. First place went to Robert Wright who built and put up 26 boxes. Other winners were Curtiss Farrar with 21 boxes, and James Marks with 16 boxes. All three boys are members of the Future Farmers of America chapter at Buckingham Central High School.

The winners of the contest were guests of the two game wardens on a trip to Washington, D. C. and a visit to the National Zoo. Three slate roofed bird boxes were presented to Park Director Theodore H. Reed by the Buckingham County group.

Splint For Nicky

If it had not been for Wayne Rosson, 6 (left), and Steve Nuckols, 10, this little rabbit would have been killed by a dog. The two Richmond boys rescued "Nicky" from a dog on Minna Drive early this summer and nursed him back to health. His broken leg was set by a Richmond veterinarian and the patient is reportedly doing fine. Each summer stray dogs take a heavy toll of all types of wildlife, from young birds to fawn deer.

Richmond *Times-Dispatch* Photo

This cottontail was rescued by Wayne Rosson and Steve Nuckols.

Good Books

Bears are fascinating animals. Some of their actions are very human-like, and they are one of the first animals we look for in the zoo. George F. Mason has chosen the bears as his subject for his latest book called *The Bear Family*. Here is a perfect subject for Mr. Mason's unique combination of scientifically accurate facts about animals together with unusual incidents that he himself has witnessed. Separate sections of this delightful book are devoted to the American black bear, the grizzly bear, the Alaska brown bear, the polar bear, bears of other lands, and the origin of the bear family. We only have one species of bear in the Old Dominion, the black bear, but it is interesting to know something about the bears of other sections of America. Morrow Junior Books, 96 pgs., $2.75, ages 8-12.

Birthday Bass For Billy

Richmond *Times-Dispatch* Photo

Beginner's luck for Billy Hicks.

When Billy Hicks of 5612 Randall Avenue, Richmond, asked his parents for a fishing rod and reel in honor of his 12th birthday, he never dreamed what he would catch with it.

It turned out that his birthday present was a lucky combination for the 12-year-old. The first time he tried his new fishing outfit, he caught an eight-pound large-mouth bass.

Billy said that he decided to try his new equipment at a private pond in Henrico County and the fish were really biting. He said that he hooked four other fish and broke the line before he finally brought in the big one. The eight-pound bass measured 32 inches and was caught on six pound test line.

Good Books

Everyone in Virginia knows that our state flower is the dogwood and that our state bird is the cardinal, but what is Virginia's official tree? The answer to that is simple; we don't have one. Virginia is among the five states of the 50 in the nation that do not have an official state tree. If you are interested in the state trees of the other states, read *State Trees* by Olive L. Earle. This book tells what the physical appearances, growing habits, and uses of each tree are. The book also mentions some of the trees' nicknames and how they got these names through legends. Morrow Junior Books, 64 pgs., $2.50, ages 10-16.

Game Wardens Are Checking Boats Throughout Virginia

Since the Virginia Boating Safety Act took effect on July 1, state game wardens have been very active throughout the Commonwealth checking boats for registration numbers, safety devices and safe operation. The warden force reports that the people of Virginia are accepting the provisions of the new law very well. Most boat owners want to comply in order to insure more safety on the waters of the state.

Top-ranking officials of the U. S. Coast Guard and the Virginia Commission of Game and Inland Fisheries met at Coast Guard headquarters in Norfolk's main post office building on July 7 to work out a coordinated boat law enforcement schedule for Virginia's public waters and reach an understanding on procedures involved in the approval and patrol of races and regattas.

Coordinated boat patrol was deemed advisable especially in the Hampton Roads area, where the Coast Guard's large patrol boats will work primarily in large, open waters and the game commission's smaller patrol vessels will work closer to shore.

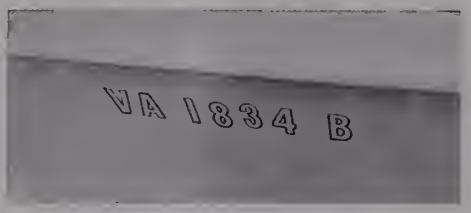
Boat Numbers Not Contrasting

Many Virginia boat owners are not complying with the new Boating Safety Act despite the fact that they have placed state numbers on the bows of their boats.

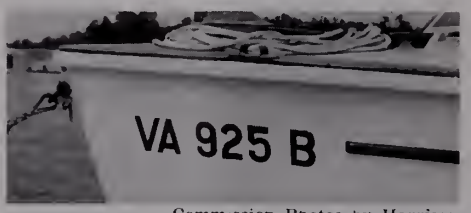
The law says that the numbers may be of any material and of any color *so long as they contrast with the background color of the boat so as to provide good legibility.*

The big problem is that boat owners are mounting white plastic numbers outlined in a thin black line on a white boat. From a few feet away, these numbers appear to be very legible, but at any distance, they blend into the white bow of the boat. These numbers are not acceptable.

Other boat owners are displaying numbers of a different color than that of the boat, but not different enough to be legible at any distance. This is not acceptable either.



These numbers are NOT ACCEPTABLE.



Commission Photos by Harrison

This is the sort of contrast required by law.

Still others are mounting their numbers all run together. The law reads that the letter groups must be separated from the numerals by hyphens or by equivalent spaces as in the following examples:

VA-1234-AB

or

VA 1234 AB

The curvature of some types of boats hides the number under the bow of the boat. Boat owners with boats of this nature should display their numbers somewhere on each side of the bow so that it can be easily seen from other boats.

Legal Regulations Regarding Use of Small Automobile Trailers

With the growing popularity of small trailers used to transport boats and other property, Captain R. B. King, State Police Safety Officer and Assistant Administrator of the Governor's Highway Safety Committee, has noted that there appears to be considerable public misunderstanding as to certain safety regulations under which they are required by law to operate.

The two most prevalent, he said, were lack of realization that any motor vehicle towing any trailer is limited by Section 46.1-193 of the Motor Vehicle Laws of Virginia to 45 miles per hour and that Section 46.1-190(1) automatically makes a speed in excess of 65 reckless driving. In addition, periodic inspection of all types of trailers is required under Section 46.1-315.

Brakes, another source of misunderstanding, are required on all trailers with an actual gross weight of 3,000 pounds or more by Section 46.1-280 and these must be controlled or operated by the driver of the towing vehicle. Section 46.1-279 requires that these be capable of stopping the vehicles, on a hard, dry surface, within a distance of 30 feet at 20 miles per hour when both hand and foot brake are applied simultaneously or within 50 feet when either is applied separately.

Towing attachment is covered by Section 46.1-336 which requires a drawbar, fifth wheel or other device not to exceed 10 feet in length from one vehicle to another and requires also that a safety chain be used.

All trailers are required by Section 46.1-262 to be equipped with a rear red light visible in clear weather from a distance of 500 feet plus a white light illuminating the license plate to the extent it can be read from a distance of 50 feet. Should the length of the combination of vehicles exceed 35 feet and be operated at night, Section 46.1-265.1 requires it be equipped with reflectors of an approved type mounted on the widest part of the towed vehicle or the load thereon in such a manner as to be visible from the front and sides of the vehicle. Section 46.1-265 requires additional markers for motor vehicles or trailers exceeding seven feet in height or width or of which the widest portion extends four inches beyond the front fender extremes.

Turn signals, Captain King concluded, present another problem. Section 46.1-298 provides that a trailer so constructed or so loaded that an arm signal (or the mechanical signal of the towing vehicle) cannot be seen must be equipped with a mechanical or electric signal device of an approved type.

Here, Captain King said, difficulty arises when an owner presents an unloaded trailer for inspection and it is approved. However, subsequent loading might bring a violation of this law, even though the trailer's equipment has been officially approved.

Wildlife Questions and Answers

Ques.: **Is the mourning dove native to Virginia?**

Ans.: Yes. Mourning doves, so far as it is known, have always been found in Virginia.

Ques.: **Do any birds have teeth?**

Ans.: No. Birds are the only creatures high up in the animal kingdom that lack regular teeth. In most cases, special adaptations in the bill take the place of the teeth.

Ques.: **What trout are native to Virginia?**

Ans.: Only the eastern brook trout. The rainbow and the brown have been introduced. The latter, however, is rare in the state.

Ques.: **Why is the Commission reluctant to stock brown trout.**

Ans.: Mr. G. W. Buller, chief of the Commission's fish division, gives the following reasons: The brown has several undesirable qualities as a game fish, is harder to raise than the brook trout or rainbow, and frequently is the subject of much criticism of sportsmen where stocked. Also, there is a tendency of the brown to drive brook trout from native streams.

Ques.: **Is the beaver the ingenious engineer he is made out to be?**

Ans.: The beaver is an accomplished woodcutter and dam builder and is quite intelligent. Our opinion is that he is not the extraordinary individual that he is often made out to be and not particularly cunning. Still, let's not down-rate this wonderful rodent. He is vastly energetic, moderately shy, constructive as well as destructive, and an individualist. He is also truly American.

Ques.: **What advice on water safety can you give parents of growing children?**

Ans.: Make safety an attitude common around your home and see to it that your children know how to swim well—and respect water.

Ques.: **What about hunting accidents? Is it safe to go hunting these days?**

Ans.: Hunting is still one of the safest of sports. Not many accidents occur in Virginia each year considering the great numbers of hunters in the fields and woods. Best advice is: Follow the Ten Commandments of Hunting Safety. Past issues of *Virginia Wildlife* have carried them and we will carry them again from time to time.

Ques.: **Is the snowshoe rabbit native to Virginia?**

Ans.: Yes, but now very rare. Reports occasionally come in that a specimen has been seen in Highland County. We welcome all reports.

Ques.: **Are there any good field guides available on birds and mammals?**

Ans.: Yes, many. The field guides published by Houghton Mifflin Company, G. P. Putnam's Sons, and Doubleday & Co., Inc., are among some of the best.

Ques.: **Is it necessary to register a sailboat under the new Virginia boating law?**

Ans.: Not necessary except if equipped with an auxiliary motor of 10 or more h.p. Boats without motors, however, may be registered to take advantage of the protection offered by the new law.

Ques.: **Is it necessary to register a boat with an existing Coast Guard number?**

Ans.: Yes. All boats powered with motors of 10 h.p. or more must be registered. The only exception is the larger "documented" vessels. Old Coast Guard numbers should be removed.

Ques.: **Is the $1.50 three-day trip fishing license good in Virginia rivers, such as the James and Shenandoah?**

Ans.: Yes. The law says "in all public waters not stocked with trout."

Ques.: **Is a motorist permitted to keep the carcass of a deer killed accidentally by his car on the highway?**

Ans.: Yes, but only after making a proper report to the nearest game warden or other peace officer.

Ques.: **Do we have any civet cats in Virginia?**

Ans.: No, the true civet cat is native to southwestern U. S.

Ques.: **Is September a good fishing month?**

Ans.: Excellent for most fresh as well as salt water game fish.

Ques.: **Is there any rail hunting in Virginia?**

Ans.: Yes, Virginia's Eastern Shore saltwater marshlands offer some 60,000 acres of good clapper rail shooting. The marshes on the west side of Chesapeake Bay also offer some rail shooting.

Ques.: **What is the most common cause of hunting mishaps?**

Ans.: Plain carelessness in handling the gun, particularly accidental discharge.

Ques.: **Does the Commission favor outlawing of the big game rifle?**

Ans.: No. In most cases the Commission tries to discourage counties from outlawing the use of the big game rifle.

Ques.: **What is Virginia's most dangerous wild animal?**

Ans.: No healthy wild animal in Virginia need be feared if unmolested. One should always exercise caution and good judgment, however, when close to wild animals.

Ques.: **When hiking in snake country, what precautions should one take?**

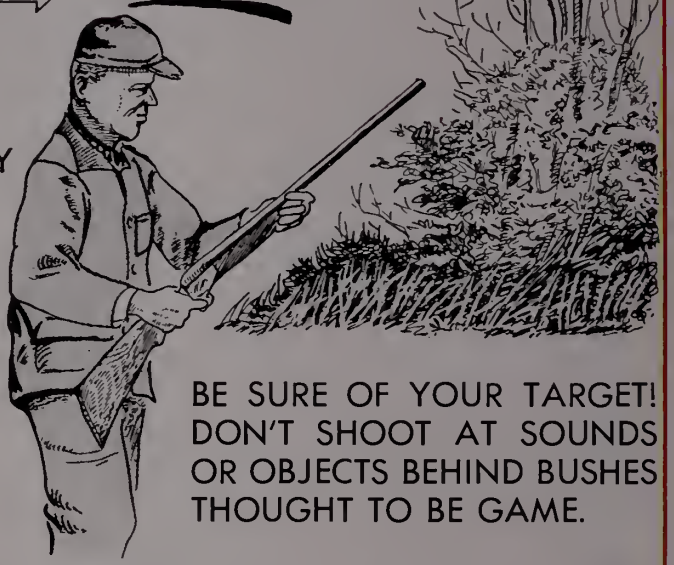
Ans.: Best advice is to remain alert at all times and avoid situations wherein bites from a poisonous snake might occur. High shoes or boots offer considerable protection.

Ques.: **Do any private conservation organizations publish educational literature for use by teachers, youth group leaders, and children?**

Ans.: Yes. Write to the National Wildlife Federation, 1412 Sixteenth St., N.W., Washington 6, D. C., for its "List of Conservation Publications." and to the National Audubon Society, 1130 Fifth Ave., New York 28, N. Y., for its "Guides to the Out-of-Doors."

Shooting Safety and YOU

NEVER CARRY A LOADED GUN IN A CAR.



BE SURE OF YOUR TARGET! DON'T SHOOT AT SOUNDS OR OBJECTS BEHIND BUSHES THOUGHT TO BE GAME.

D RAVER

WATCH YOUR LINE OF FIRE. LOOK BEFORE YOU SHOOT.

YOUR GUN IS NO CLUB– DON'T USE IT LIKE ONE.

WATCH THAT MUZZLE.

KEEP YOUR FINGER OFF THE TRIGGER UNTIL YOU'RE READY TO SHOOT.

REMEMBER: TREAT EVERY GUN WITH THE RESPECT DUE A LOADED GUN!